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THE CHINESE HAVE a proverb saying that Error will make the circuit of the globe while Truth is pulling on her boots. By an odd slant of our natures we incline more toward myth and rumor than toward plain matters of fact. Cagliostro, the most impudent and successful imposter of modern times, counted his followers by the thousands, whereas the scientific men of the same period in the eighteenth century made comparatively little headway. The South Sea Company in England engulfed the fortunes of merchants, lawyers, clergymen, physicians, and mechanics when, in 1720, it came to an inglorious end. The bursting of John Law's Mississippi Bubble brought disaster to all classes in France. In our own generation hundreds are defrauded by stock-selling schemes so obviously spurious as to be palpably absurd. It seems easier to gain credence for commercially unsound opinions than for the reasoned judgment of competent authorities. False impressions multiply like dandelion weeds, while correct ideas grow slowly and require the most careful nurture.

It is this tendency which makes it difficult to gain wide and rapid distribution for accurate analysis of conditions. Hence arises the necessity of sharp and frequent emphasis upon reliable estimates of business. In many quarters there has been a halting of normal buying because of wrong views of the present situation, notwithstanding overwhelming authority to the contrary. It is this state of affairs which has actuated the Sales Promotion Committee of the American Hardware Manufacturers' Association to take measures for mobilizing the forces of constructive opinion in the hardware industry. In a letter to prominent men of the industry the Committee expresses the belief that the time is now ripe for the members of the Association to take united action in doing what they can to put before the trade at large in a brief and concise way a statement of the situation as it really is, for the purpose of bolstering up those manufacturers or jobbers who may still be feeling somewhat weak about the stability of prices. It is the intention of the Committee to collect the prevailing opinions of the industry in the form of a circular letter to be sent out to the trade.

A similar work is being done by the Information and Education Service of the United States Department of Labor in preparation for a report on the economics of the construction industry. Definite conclusions have been reached after exhaustive research in every part of the country. The data upon which these

conclusions are based may be summarized briefly as follows:

Buyers since the armistice, although showing a desire to wait for lower prices, have been compelled to buy to meet their daily needs. During the war, because of scarcity of commodities and high prices or because of patriotic self-denial, they did not buy in advance of need, as is customary in an era of rising prices. Consumers' goods are in great demand and retail trade is now moving in great volume.

If the production capacity of industry should be greatly increased, lower prices would not necessarily follow. If there is a strong enough demand for commodities, prices need not fall, no matter in how large volume commodities are produced. There is every reason for expecting such a strong demand. The world is now suffering from a great shortage of durable goods—buildings, transportation facilities, and industrial equipment. Furthermore, people, both in the United States and Europe, have a stronger desire for consumers' goods than ever before. This is true partly because of the scarcity of certain goods during the war period, and partly because of the new experiences through which tens of millions have passed, which have awakened in them desires for goods and services they never enjoyed before. Along with greater production of goods there is likely to go further extensions of credits rather than contraction. Neither the credit system of the United States nor that of the world has reached the limits of its power of expansion.

Business men of the United States need not hesitate to plan for an immediate period of business prosperity. No period of depression and no collapse of values need to be feared. The man who goes full speed ahead will gain an advantage over his procrastinating competitor which will far outweigh any possible slight decline in costs of production.

All the indications lead to the conclusion that we have entered a new economic era. There is as little likelihood of a return to the measures of value prevailing before the war as there is of a reversion to the standards in vogue in the days of Washington and Jefferson. Variations there may and will be, but there will be no general recession of prices to the levels of five years ago. That period of history, estimated in industrial developments of the interval since then, is as definitely a stage of the past as the times of the wooden plow and the Franklin stove. It is a mistaken notion to think of the present as a period of readjustment to former conditions. The wise merchant will waste no energy in sighing for the past,

but will serve today's customers and prepare for bigger business tomorrow.

THIS IS THE TIME of the year to sell screens. The hardware dealer who handles goods of this description must depend upon convincing copy for effective advertising. More people will buy screens if he shows them that health is involved as well as comfort. Here is a brief argument which may be used to advantage in advertising screens:

Flies and mosquitoes are dangerous nuisances in any community. Flies are bred mostly in stable filth; mosquitoes in stagnant water standing in pools, ponds, ditches, street catch basins, sagging eave troughs, tin cans and broken earthenware. Without suitable breeding places neither flies nor mosquitoes can breed and multiply. Clean up your neighborhood and get rid of these annoying and disease-spreading pests. Keep them out of your house with Blank's reliable screens.

COLLECTIVE ADVERTISING is one of the conclusive proofs of the advantages of organization. Every member of an association is benefited in his individual business by the sort of general publicity which educates the people to the value of the product and service of a particular industry. The cost of conducting a campaign of instruction is too great to be borne by any single dealer or contractor. But it is only nominal when apportioned among many dealers or contractors through the medium of a trade association. A noteworthy example is supplied by the first of a series of advertisements by the Warm Air Heating Committee of the Metal Roofing and Heating Engineers of Philadelphia, Pennsylvania.

This advertisement, measuring nine by fifteen and one-quarter inches, is printed in big type, easy to read. It is worded in simple, convincing language, as follows: "Better Heating. How to get more and better-directed heat out of coal is interesting to every homeowner, investor, builder and architect; and now is the time to think and act on it.

"That there is need for action was shown to us by our experience with the Fuel Administration during the war. The figures brought to our attention on the waste of coal were staggering; and we found that the fault lay mostly in the individual home. Your home and your neighbors.

"The cause of this waste, we found, is that the majority of heating systems in Philadelphia have been improperly installed by unskilled contractors. The result each winter is insufficient heat, misdirected heat, waste of coal and an epidemic of diseases.

"As Heating Engineers we propose to correct these conditions. The problems are small in the hands of experts. We also suggest that all work on heating systems be done now. It is more economical and satisfactory to have cleaning and repairs done in the spring and summer months. Every system needs attention after a winter's use.

"This Association of over a hundred skilled Heating Engineers places its combined experience at the

command of the public. There's an Association member in your neighborhood—and we want to give you his name so you may enjoy better and more economical heating next winter. It will pay you to Phone, Write or Call for Free Booklet. Join the movement for Better Heating Today."

The foregoing advertisement concludes with the address of the Association. By reason of its collective character, it gives an impression of helpful disinterestedness, which is an invaluable factor in resultful publicity. No one familiar with the conditions of the warm air heating industry will hesitate to approve this kind of publicity. It needs to be duplicated in all parts of the country in order that the warm air heater may be popularized to the lasting benefit of all concerned.

WHEN THINGS ARE going well, it is still necessary to maintain all the ordinary precautions against economic disaster. Undeniably, our country is entering upon a period of prosperity. The buying resources of the people are greater than at any stage of our progress and prices are firm, in the main. In such favorable circumstances, failures decline as to number and degree. Yet there is danger of relaxing the vigilance which is essential to sound business. It is comparatively easy for the untrained merchant to survive under such conditions, declares J. H. Tregoe, secretary-treasurer National Association of Credit Men, in a letter to the members of his organization. Yet, he insists, it would be unwise for the grantors of commercial credit to fall asleep under these conditions and take it for granted that we had entered upon a credit millennium and that old conditions had passed out not to return.

We are experiencing conditions that suggest the same degree of care as when the situation is more complex and involved, and we are to pay a penalty, beyond peradventure, if the smallness of the present bad debt loss lulls us into sleep and we go ahead with our credit extensions, throwing off the care and skill which should always be exercised in the making of our credits.

During the past month commercial traffic began to take on a perceptible forward movement, where hesitation had previously controlled. Even building construction, one of the slowest moving of all classes of enterprise during the war period and since, is starting to meet the demands so evident on every hand for business and living accommodations. The lavish use of our purchasing commodity, which is our currency as represented in our bank deposits, gives us a situation that calls for careful watchfulness.

Again, continuing demands for high wages in the industries make more difficult the lowering of prices, and though we cannot reasonably anticipate that prices will indefinitely hold close to those of the pre-war period, yet in maintaining their upward trend, with an extension of our credit currency, we undoubtedly have a danger which, if not handled intelligently, may give us eventually a big bill for our improvidence.

Thrift in our personal affairs, a more moderate buying of luxuries and the use of our purchasing

power for the legitimate needs of commerce will help us immensely in handling the situation, and this is something which not alone the grantor of credit should study and treat intelligently, but every individual in the land.

RANDOM NOTES AND SKETCHES.

By Sidney Arnold.

Work and joy are inseparable. There are a great many people whose idea of happiness is no better than that of the ante-bellum darkey who said that "in de sweet by-and-by every day will be Sunday," his conception of heaven being a place and condition in which work would be entirely eliminated. For the ignorant, overworked old slave this idea may have been beautiful, but such a desire on the part of an intelligent being is degrading. Permanent inaction is not rest nor life nor happiness—it is torpor, blindness, death. The purest joy that a human soul may know lies not in inactivity, but in the harmonious activity and correspondence of all the faculties which increases not only one's powers, but his pleasures as well.

* * *

All the intellectually and commercially big men of America today are preaching and practicing optimism. Experience has taught them that the people's attitude of mind is the primal factor in prosperity. The United States Department of Labor recognizes the truth of this assertion and is consistently advocating a working optimism for all lines of industrial endeavor. Its message to the people is: "Now's the time to start things. Peace-time industries must soon be going full swing—speeded up for delayed peace necessities and luxuries, creating a job for every home-coming fighter, reabsorbing every loyal munition worker.

"Buy what you need. Start buying and selling all along the line.

"If you buy, you deplete the goods of the merchant and he must buy, and he in turn depletes the surplus stock of the manufacturer, who thus is forced to buy more raw materials, produce more goods, employing more workmen."

* * *

I had the pleasure this week of receiving a visit from Frank B. Higgins of St. Louis, Missouri, first vice-president of the National Association of Sheet Metal Contractors. He was in exceptionally good company when he came, for his charming wife was with him. Brother Higgins is rightfully very optimistic as to the prospects of the sheet metal trade.

* * *

My friend Thomas E. Henry of the Henry-Miller Foundry Company, Cleveland, Ohio, knows lots of good golf stories. Here is one of them:

Jesse Strauss, who is connected with one of the big New York department stores, is a friend of Al Jolson, the comedian, and one night dropped into the Winter Garden to see the blackface make 'em laugh. Jolson spotted Strauss in the audience and cooked up a joke for him.

Jolson's feeder asked him how he had spent the morning.

"Oh, I had a rotten time," answered Jolson. "I

was shopping all the morning at Strauss' store. This afternoon when I went on to play golf I couldn't say 'fore.' I kept saying '3.98, 3.98.'"

* * *

We were discussing the kind of salesman who becomes so thoroughly absorbed in his business that he can think of nothing else. My friend Robert C. Johnson of the National Screw and Tack Company, Chicago, Illinois, said that the topic reminded him of an extreme example, which he related thus:

"Are you sure you love me?" said a pretty girl to her admirer.

"Love you!" echoed the smitten one. "Why, darling, while I was bidding you good-bye on the porch last night your dog bit a piece out of the calf of my leg, and I never noticed it till I got clear home."

* * *

Mr. friend F. A. Heitmann, hardware jobber of Houston, Texas, tells how the darkies view the effect of the war upon their race.

Mandy and Selah, both very fat and very black, were riding down town in a street car and conversing in loud tones across the aisle about the progress of the war. Mandy was the oracle of the occasion, and spoke her convictions in no uncertain tone:

"Selah, Ah done tole yuh this wah gwine to be a wonduhful t'ing foh us colo'd folks. De las' wah done make us free, didn't it? An' dis wah suh gwine to make us all ladies and gemmen'."

* * *

That salesmanship must avoid partisanship of every kind is the burden of the subjoined verses of Edgar A. Guest. One never knows what prejudices may be stirred into action by discussing controversial topics. It is the business of the salesman to establish a mental harmony between himself and the prospective buyer in the interests of his goods:

If I Were a Salesman.

If I were a man with goods to sell
And landed a chance my tale to tell
To a man with power to buy,
I never would talk about shows and things
Or give my views on warring kings
While the precious minutes fly,
With a funny yarn I would not begin,
But right from the jump would buckle in
To tell of the goods I had;
My competition I'd never knock
But I'd boost the quality of my stock.
And get out my order pad.

I never would spend his time or mine
In chatting of weather, bad or fine,
Or arguing politics;
I'd waste no talk on a tale of woe
Or bring out a deck of cards to show
A few of my clever tricks.
The war's results I would quite forget,
And the tariff, too, and the nation's debt,
Though the times be out of joint,
I'd start right in from the jump to dwell
On the articles I was there to sell,
And I'd talk right to the point.

I'd pass up religion and lodges, too,
And art and science and novels new,
And the women that I had met.
I'd stick right close to my little job
And make no mention of Tyrus Cobb,
Or friends in the upper set.
I'd business do in a business way,
And I think I'd find my scheme would pay.
But still, if my goods be spurned,
I'd travel on with this thought sublime,
That I had been digging all the time
And had left no stone unturned.

UP TO THE MINUTE NEWS SIFTINGS

An increase of capital stock from \$100,000 to \$175,000 has been made by The A. T. Nye and Son Company, manufacturers of stoves and ranges, Columbus, Ohio.

STOVE SALESMEN ENJOY OUTING.

Continued tension is not good for so delicate a mechanism as the nerve system of the human being. A certain amount of relaxation is essential for the maintenance of health as well as for the development of business efficiency. This is so well understood by the Stove Salesmen's Association of Pennsylvania, that every year its members have an outing for the refreshment of the salesmen and the renewal of friendships which help keep the spirit young. The June outing of the Association this year was interfered with to some extent by heavy rains which, however, could not dampen the enthusiasm of those in attendance. The baseball game could not be played but that gave all the more time for other divertimento. The Entertainment Committee redoubled its efforts to compensate for the adverse weather conditions. That no one suffered disappointment because of the watery handicap, was quite evident.

Without being in any way partisan, Bill Habicht is to be commended for the lavishness of his hospitality which he extended to everyone. He certainly was on the job, and if anyone lacked either liquid or other refreshments, Bill is free from any responsibility. There was, of course, (as it was impossible to go away from the building) something doing every minute. Dave Bowers, for example, was kept busy interesting his guests, Foster Evans of the Roebling Company, Albert Danner of the Campbell Oilcloth Company, and John Klepper of Printing Ink fame, to guess who would get the clock.

The President, George H. Rotz, took charge of the prizes in the absence of Harry Borzell, and without any flattery made a very good substitute. Then A. B. Crampton had no difficulty in obtaining for his guests unlimited pleasure trying to outdo each other to see who would get the manicure set. They were H. B. Collinson of the Packard Motor Co. and Bert Gamble. Lee S. Leiser and Frank S. Hawken got into a discussion relative to the efficiency which the older man has over the younger one. O. M. Fagley, while he missed his side partner, Fred Sabin, and the game of quoits, was most happy. J. W. Abbott, Cuyler Rees and another member stood off together giving their views regarding the future of the stove business. Fred Fluck and his inseparable companion, Bob Garrett, came a little late, but how they did enjoy that time!

It afforded all great pleasure to greet one of the oldest members, James A. Walker, of York, Pennsylvania, which was reciprocated in like manner by

himself. H. V. Jennings, a resident of the same town from which Mr. Walker came, enjoyed himself in his own quiet way. William G. Levis and his son, William B., were right at home, particularly William G., who has not attended an outing for three years.

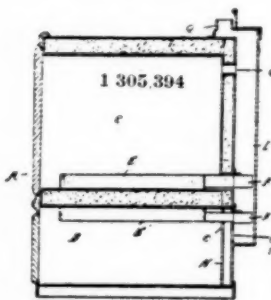
Martin Brock and Louis Blöse, who accompanied Bill Habicht, were in close conversation all afternoon. It evidently was of a most edifying character as Mr. Brock is classed as an expert of Havana tobacco, and from now on Mr. Blöse will know a good cigar from a poor one. Jimmy McConlogue, the guest of Jim Wotherspoon, was so favorably impressed with the sociability which prevailed that he is going to become a member, and will be proposed at the next meeting. In another part of the building was George Gott, a guest of O. M. Fagley. Burt Miles and Mason Klein, guests of Bill Habicht, Bob Hoy, Bob Smith, Jim Wotherspoon and Albert J. Kochel, were doing their best to see who would have the most before dinner was served. An outing of the Stove Salesmen's Association of Pennsylvania would not be complete without John McConville. In his quiet, unassuming way, he goes around renewing and strengthening old friendships.

About 4:30 p. m. dinner was called. And such a dinner! It was ample in quantity and unlimited in variety and everyone expressed himself as being satisfied. But just as the table was being cleared, J. B. Borden stepped in. He must have been hungry, for all that was left on his plate after he finished were the bones of the shad.

Notwithstanding the inclemency of the weather, the guests and members departed from the outing of 1919 most happy, with the ties of friendship more closely bound than ever.

PATENTS A STOVE CONSTRUCTION.

Robert H. Miller, Detroit, Michigan, assignor to the Detroit Stove Works, Detroit, Michigan, has obtained United States patent rights, under number 1,305,394, for a stove construction described in the following:



In an electric range, the combination with an oven, of a heating resistor therewithin, electrical connections for said resistor, terminal blocks for said electrical connections, and an air vent secured to the oven and forming a housing for said electrical connections and terminal blocks, the opening from the oven into the air vent being located adjacent the terminal block to compel a passage of air adjacent the terminal block to cool the same.

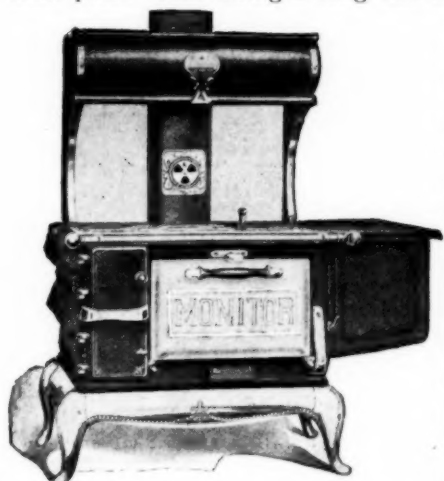
Cut prices never made poor service good.

STOVE COMPANY IS INCORPORATED.

The constant enlargement of the field of business in which its operations are to be carried on and the extremely promising outlook, have actuated the incorporation of the Incandescent Light and Stove Company of Cincinnati, Ohio. Its capital stock is placed at \$50,000. Paul J. Connelly and associates are the incorporators of the new firm. The Company is in a favorable condition for the immediate beginning of production by reason of the fact that it has taken over the plant of a corporation bearing the same name in Oakley, Ohio. Although this plant has not been operating for some time, it is sufficiently well equipped for the present purposes of the Incandescent Light and Stove Company. A policy of fair dealing and maintenance of standards of excellence upon which all the officers of the Company are agreed, is certain to result in the rapid advancement of the new corporation.

RANGE SELLS AT A MODERATE PRICE.

The A. T. Nye and Son Company of Columbus, Ohio, make the Monitor Coal Range which is shown in the accompanying illustration. One of the many advantages of this range is that it is sold at a moderate price—thus filling a long felt need. It is a full



Monitor Coal Range, Made by the A. T. Nye and Son Company, Columbus, Ohio.

size, smooth finished stove, trimmed with silver nicked castings. The oven is large and roomy, the oven door being drop style balanced by an oil tempered spring encased in a spring box which protects it from abnormal heat. The

fire box has corrugated linings which allows a circulating air space. The use of coal or wood is permitted by the duplex grates. The covers are guaranteed against warping or cracking for three years. The reservoir is of cast iron with porcelain white enamel inside. The high closet is of Armco iron. The Monitor coal range is also made with white enameled panel on the door and with glass panels in the oven door. It can also be furnished plain without nickel trimmings or white splashers. The A. T. Nye and Son Company of Columbus, Ohio, urge dealers to send for a sample today and also to ask for catalog No. 91.

DON'T HIDE YOUR GOODS AWAY.

Give your goods a chance. Don't hide them away and expect your trade to guess that you carry them. Displays and sales go hand in hand, and goods must be seen to be sold.

ADVOCATES CHARACTER BUILDING AS PART OF BUSINESS EVOLUTION.

Of all the extraordinary developments brought about, directly or indirectly, by the great war, none was more striking than the sudden rise to fame of many hitherto comparatively unknown men, says the New York Commercial. Their success is easily explained; they were thinkers; men who have realized the mighty power of concentration in the solution of business and other problems.

Bacon said: "Reading maketh a full man, writing an exact man, and speaking a ready man." If the philosopher were alive today he would surely add, "Thinking maketh a complete man." Every business organization is ever ready to welcome into its fold men who have practiced the art of mental self-examination, who have discovered how to express themselves more fully in thought, word and deed; men who have substituted "I will" for "I wish" and are prepared to prove it.

The greatest prizes in the business world are always open to the well-equipped man. Competition for them is by no means severe. Heads of firms and corporations know how hard it is to find just the right man for responsible positions. It is always easy to fill the routine places, but when a man of unquestionable ability is wanted at a moment's notice the employer usually has difficulty in filling the vacancy. The well-rounded man, morally, intellectually and physically, is indeed to be envied; heads of great houses are continually on the lookout for him, but for obvious reasons he is rarely in the market for a position.

The best introduction a man can have is to himself. If we analyze the character of men holding high-salaried posts it will be found that concentration, self-reliance, ambition, judgment and a good memory were their stepping stones to success. Luck plays a very minor part in the great game of "getting what you are after."

Men with trained minds were never in such demand as they are today. It is the mind which makes every discovery, every new idea, which formulates every plan, which acquires all knowledge and is back of all our actions.

Many men are always complaining about the lack of opportunities, but the truth of the matter is that their objection to mental exercise has landed them in the rut, where they are likely to remain unless they mend their ways. Every man, rich and poor alike, is endowed with a brain, a thought factory, and if we want that factory to pay high dividends we must increase its efficiency and thus speed up production—a very simple matter when we make the discovery, as every successful man must do sooner or later, that we are the architects of our own fortunes.

OUR THOUGHTS INFLUENCE OTHERS.

It has been well said by Thomas Dreier that we should remember that we are either raising or lowering the standards of those with whom we associate. Every thought, every word, every act of ours, either adds to or subtracts from the strength of our companions.

THE WEEK'S HARDWARE RECORD

Of Interest to Manufacturer, Jobber and Retailer

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing western hardware and metal prices corrected weekly. You will find these on pages 42 to 47 inclusive.

The Corbin Screw Corporation, New Britain, Connecticut, has let a contract for a six story, 60x120 foot, factory that will cost \$90,000.

A contract has been let by the Heller Brothers Company, Newark, New Jersey, makers of files, rasps, etc., for a one story addition to their plant.

The Wade Washing Machine Company, Nashville, Tennessee, has been incorporated with a capital of \$10,000 to manufacture washing machines.

With a capital stock of \$50,000 the Bryan Washing Machine Company, Bryan, Ohio, has been incorporated to manufacture electrical washing machines.

The New Haven Hardware Specialties Company, New Haven, Connecticut, is planning the erection of a two story, 40x60 foot, plant at an estimated cost of \$16,000.

A number of additions to its plant, totaling about \$15,000 in cost, will be made by the White Lilly Manufacturing Company, Davenport, Iowa, producers of washing machines.

A three story factory to cost about \$25,000 will be built by J. R. Torrey and Company of Worcester, Massachusetts, adjoining their present plant. It will be of brick, reinforced concrete and wood.

The Grate-Cut Manufacturing Company, Milwaukee, Wisconsin, has been incorporated for \$10,000, to manufacture food cutters and slicers. Edward M. Bauer and Jacob L. Bauer are the incorporators.

The B. and D. Manufacturing Company, Rock Island, Illinois, has been incorporated for \$15,000 to manufacture hardware. D. Harley Donaldson, Theodore Breigel and E. W. Schroeder are the incorporators.

The Leyse Aluminum Company, Kewaunee, Wisconsin, is erecting a two story plant addition, 60x150 feet. The Company is providing facilities for manufacturing a general line of kitchenware and aluminum utensils.

The Northwestern Hardware and Steel Company, Great Falls, Montana, has been incorporated for \$60,000. The incorporators are Harry P. Howes, Edward K. Deuzarder, H. B. Hoffman, N. C. Howes and J. W. Jordan.

RECEIVES WELL-MERITED PROMOTION.

Luck plays no important part in the development of the average business career. Hard work, loyalty, study,

and enthusiasm are the chief factors of progress. Notwithstanding the plaint of pessimists and shirkers, merit is bound to be recognized, as in the case of Edward D. Jones, who has been advanced to the position of manager of trade sales for the Yale & Towne Manufacturing Company, New York City. For twelve years he was traveling sales representative for the Bostwick Braun Company, hardware jobbers of Toledo, Ohio. In 1909 he went to work for the Yale & Towne Manufacturing Company in the same capacity. Seven years later he was appointed supervising salesman of that company, from which post he has just been promoted to the responsible office of manager of trade sales.

IS ELECTED SECRETARY MINNESOTA RETAIL HARDWARE MUTUAL.

Intelligent and faithful service for ten years as first assistant secretary of the Retail Hardware Mutual Fire Insurance Company of Minnesota was rewarded when T. G. McCracken was elected at the regular quarterly meeting of the board of directors to fill the office of secretary. He succeeds the late M. S. Mathews. The other officers elected are: C. F. Ladner, president; A. Marckel, vice-president; H. Hauser, treasurer; and E. B. Savage, assistant secretary. The report of the treasurer for the first five months of the current year shows the largest gain of insurance in force for any corresponding length of time in the history of the company.

IS MADE MANAGER CHICAGO OFFICE OF PITTSBURGH STEEL COMPANY.

His wide and varied experience in the jobbing trade renders George W. Jones peculiarly well fitted for the post of manager of the Chicago office of the Pittsburgh Steel Company to which he has recently been promoted. During his five years of service as assistant manager of the company's New York City office he acquired a knowledge of the administrative phases of the business which is certain to be of great value in assuring his successful conduct of the Chicago office.

When he came to this country from Wales with his parents at the age of 13 years he settled on a farm in Northern Pennsylvania, where he remained until his twenty-first year. There he learned many things which were very useful to him when he entered the business world. In 1908 he became connected with the Pittsburgh Steel Company in the capacity of salesman. He began by selling barbed wire and wire fencing in the agricultural sections of New York state. Two years later he was called to the general offices of the company in Pittsburgh, Pennsylvania, and assigned as an assistant in the management of the fence sales depart-

ment. During the war he was in charge of the company's office in Washington, D. C., where his familiarity with the various aspects of the business enabled him to serve the Government and the company with equal efficiency.

PITTSBURGH HARDWARE MEN PREPARE TO ENTERTAIN DELEGATES.

Extensive arrangements were perfected at the meeting of the Pittsburgh Hardware Dealers' Association, Hotel Chatham, Pittsburgh, Pennsylvania, June 20, 1919, for the entertainment of the delegates to the National Retail Hardware Convention which is to be held in Pittsburgh during the week beginning June 23rd. A feature of the entertainment during the Convention Week will be a chicken and waffle dinner, and informal dance at The Pines, Wednesday evening, June 25th, under the auspices of the Pittsburgh Hardware Dealers' Association. It is the intention of the local organization to leave no effort untried in an endeavor to make the delegates remember Pittsburgh with pleasant recollections for the rest of their lives. The Pittsburgh hardware men know that their brethren from various parts of the United States have high anticipations with regard to the week of the convention. They are, therefore, determined that no delegate shall return to his home without having experienced the utmost hospitality and good fellowship for which the Pittsburgh Hardware Dealers' Association is deservedly famous.

At the meeting Friday, June 20th, at the Hotel Chatham, a card entitled "The Hardware Salesmen's Creed" was distributed among the members with the advice that it be tacked up in every dealer's store where the salesmen can see it. It is a simple creed, yet its observance in every day affairs of the store is certain to enlarge the profits and increase the good will of the customers. The creed is as follows:

I believe in the goods I am selling, in the firm I am working for, and in my ability to get "Results"

I believe that honest goods can be sold to honest men by honest methods.

I believe in working, not waiting; in laughing, not weeping; in boosting, not knocking, and in the pleasure of selling goods.

I believe that a man gets what he goes after; that one order today is worth two tomorrow, and that no man is down and out until he has lost faith in himself.

I believe in today and the work I am doing, in tomorrow and in the work I hope to do, and in the sure reward which the future holds.

I believe in courtesy, in kindness, in generosity, in good cheer, in friendship, and honest competition.

I believe there is an order somewhere for every man ready to take one.

I believe I am ready right now!

CONSIDERS UNION OF WIRE COMPANIES.

A merger of three important Eastern companies is under consideration and in all likelihood will take place, with benefit to the organizations involved, which are the Wright Wire Company, the Morgan Spring

Company, both of Springfield, Massachusetts, and the Clinton Wire Cloth Company of Clinton, Massachusetts. The majority of the voting stock of these three Companies has already been deposited in escrow with New York and Boston bankers. It is estimated that notable economies of production and distribution can be achieved by the contemplated merger. The Companies are in an exceptionally fine condition financially and the interests of the stockholders will be thoroughly safeguarded in the proposed consolidation.

DECIDE TIME AND PLACE OF NEXT OHIO HARDWARE CONVENTION.

At a meeting last week of the Executive Committee of the Ohio Hardware Association in the Hotel Deshler, Columbus, Ohio, it was decided to hold the next convention of the organization February 24, 25, 26, and 27, in Cincinnati, Ohio, with headquarters at Hotel Gibson. In view of the fact that industry is rapidly assuming normal proportions, the Executive Committee has determined that special efforts shall be made to have a comprehensive exhibit of hardware commodities at the forthcoming convention. Arrangements have already been made for the housing of this exhibit in the Music Hall where ample space is available for the purpose.

MOVES SPORTING GOODS PLANT.

During the war the Marlin-Rockwell Corporation of New Haven, Connecticut, suspended the operation of its sporting goods machinery in order to devote the entire facilities of the New Haven plant to the making of machine guns. In the readjustment of its business to a peace-time basis, the corporation has decided to move its sporting goods plant from New Haven to Norwich, Connecticut, about July 1st. The Marlin-Rockwell Corporation owns the Hopkins and Allen plant in Norwich, Connecticut, and intends to use the equipment of the latter establishment for the manufacture of its line of sporting goods.

SAYS LICENSE IS STILL REQUIRED TO SELL FARM EXPLOSIVES.

In view of the uncertainty which seems to prevail among hardware retailers, attention is called to a ruling of the Department of the Interior, Bureau of Mines, Explosives Regulation, Washington, D. C., relative to license requirements covering explosives to be used for agricultural purposes. In response to a letter of inquiry from E. I. du Pont de Nemours and Company of Wilmington, Delaware, Clarence Hill, Chief Explosives Engineer, states:

Our legal department advises that it is necessary for dealers to have a license to sell explosives for agricultural purposes.

When shipments are made to dealers the license number will be required, and the recent revocation pertains only to farmers themselves, and not dealers.

Should a shipment be made directly to a farmer it is only necessary to state on bill of lading "For Agricultural purposes only."

PRINCIPLES AND EXAMPLES OF GOOD WINDOW DISPLAYS.

STRIKING DISPLAY OF NATIONALLY ADVERTISED TOOLS DRAWS NEW CUSTOMERS INTO STORE.

The first thing which a window display must do is to distract the attention of the passer-by from his pre-occupations and center it upon the goods in the exhibit. In the race for profits every merchant finds himself entered for the prize against the thoughts of the prospective customer speeding along lines divergent from the retailer's interests. In the hurry and tension of urban life it requires much planning to devise something to draw and hold the notice of the passer-by long enough to present to him the message of the store's stock and service. The race is not always to the swiftest but to the diligent and studious, to the man who uses his brains as well as his feet to win—as Hippomenes did in the fabled race with Atalanta.

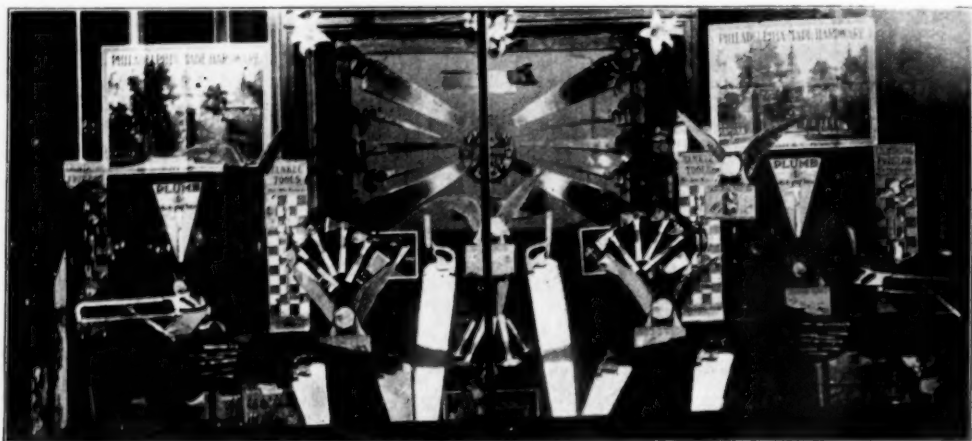
The legend is worth repeating because of its lesson. Atalanta, so the myth runs, was a virgin of Arcadia who imposed upon all her suitors the following conditions: Whoever could conquer her in a foot race should have her hand for the prize; whoever should try and fail should suffer death. Hippomenes (or according to one legend Melanion) won her by throwing three golden balls, as he ran, which drew her one after the other, from the track, and enabled him to reach the goal before her.

Hippomenes, you may be sure, spent lots of time in studying the nature of Atalanta and calculating how to draw her from the track often enough and long enough to permit him to win the race by strategy rather than speed. Human nature has not undergone any profoundly modifying changes since the days of the legendary Atalanta and Hippomenes. It is just as necessary today to study the psychology of men and women in the field of salesmanship as it was when the first merchant opened a store and placed commodities on display.

Logically, window displays are part of salesmanship. Therefore, they require study. Since their primary appeal is through the eye, it is necessary to arrange the goods in such a manner that each article is sufficiently distinct to make a quick impression upon the vision. To achieve this purpose, the window dresser must acquaint himself with the principles of

optics to the extent to which they bear upon window lighting. Too much brilliance or too subdued a light are equally detrimental to the effect which is desired, namely, that of illuminating the articles enough to attract and hold the regard of the passer-by.

Sometimes considerable ingenuity is brought into



Window Exhibit of Nationally Advertised Tools, Displayed by A. Deutz and Brother, Laredo, Texas.

play to modify the established lighting system of a store's windows. Where it is of the indirect, overhead type, little trouble is encountered. In that case it is comparatively easy to increase or diminish the intensity of the light by changing the incandescent lamps to the proper grade. But in conditions where the lamps are in full view of the observer and throw more or less of a glare into his eyes, the addition of reflectors or shades of varying densities is needed. In such circumstances, one must experiment to find the most suitable arrangement. Where sources of light other than electricity are used, corresponding modifications are needed.

Tools having a bright finish lend themselves more readily to window displays for the reason that their polished surfaces are excellent reflectors of light. Care should be taken, however, to prevent too much light from being thrown upon them. Effective use of lighting is a highly important element in the success of a window display, as shown in the accompanying illustration of a window exhibit of nationally advertised tools in the hardware store of A. Deutz and Brother, Laredo, Texas. This display proved its value and rewarded the labor spent upon it by drawing new customers into the store and increasing the sales of the various articles shown in the window.

WINDOW DISPLAYS BRING PROFITS.

An attractive window display is one of the big factors in successful modern retailing, and an effective window trim is simply a matter of good taste, a sense of proportion and an understanding of the things in which your prospects are interested.

OUTLINES RULES FOR MAKING WINDOW DISPLAYS MORE ATTRACTIVE.

A phase of the mechanics of window display which needs to be emphasized is clearly set forth by a writer in *Hardware and Metal*. He calls attention to the fact that the window display makes the most favorable impression when it is below the prospective customer's eye. Therefore, he declares, the question of the window base or floor is an important one. Shall it be high or low, flat or in graded elevations? It makes all the difference in the world in displaying goods whether they are properly shown or not. Some experts advise placing goods on the level of the eye. This means that the observer stands with chin horizontal and looks into the window and the goods are in line with his eyes. Rather high for most displays, is it not? And then, too, all people are not the same height.

Generally speaking the usual display makes the most favorable impression when it is from two to two-and-a-half feet below the level of the average person's eyes. This means that windows must be lowered, others raised.

Some one person of the store force should have charge of the property room and see that everything is kept clean and properly cared for when it is not in use. Colored papers and cloths for draping should be wrapped and put in boxes. Christmas decorations stored and labelled so that they can be found when wanted, patriotic trimmings in a section by themselves. In this way there will be a continually increasing accumulation of window dressing supplies which can be used in endless variety.

The window background is of equal importance with the arrangement of the floor. The background should not be so high as to cut off the view of the store within, nor to shut out light from the street. It can not be eliminated altogether or the display will look vague and without beginning or end. Probably a background of three feet will give the most general satisfaction. Sometimes this will need to be built up higher for special displays, but rarely should it be lower. The background can be of oak panelling to match a polished hardwood base, wall boards, a curtain of some soft, neutral color on a rod, or any other preferred arrangement.

The illumination should be such that the goods within the window are thrown into relief. Too often the light in the store window dazzles the eye of the beholder, in place of being thrown directly upon the goods themselves. The light, however, should never be so bright as to be objectionable. A soft, clear glow is always better than a dazzle. The height, shape and location of the window will all govern its method of illumination.

As for the dressing of the hardware window itself, it is impossible to lay down more than general rules.

1. The display should be reasonable.
2. It should be of a few closely related articles.
3. It should never confuse by a large showing of many things.
4. It should be changed at least once a week.

5. It should be planned for in advance at least six weeks.

6. The window should never be given to any concern for their use without reasonable compensation. It is the most valuable part of the store from a selling standpoint.

7. The window should never give place for one hour to a program or announcement card which is out of date. It gives the bystander a very bad impression.

8. Have a regular time for dressing the window.

9. Make some one person responsible for the doing of it and have him submit his plans to the proprietor for approval before the work is begun.

10. Co-relate the window display and the newspaper advertising.

11. Goods which are marked with a price bring more business than those without the price.

12. Moving features operated by clock work or some other device very often attract trade.

13. No matter how beautiful a window may be it is not successful unless it sells goods.

14. Objects may be used to attract attention, such as war souvenirs, etc., but they must have a point of contact with the article displayed.

15. Keep track of the amount of goods sold of each kind displayed in the window while they are shown. This will give valuable selling hints as well.

16. Be sure to observe special holidays in the window trim. It marks a store as up-to-date.

17. Do not be satisfied with just "setting" things in the window. Arrange them so they will tell a story.

18. Study trade publications and other live windows for suggestions.

19. In dressing a window, put in goods just a little in advance of the season—but not too far.

You will be surprised how often people will come in in a month, six months, or even long after, and say: "I saw such and such things in your window a little while ago," not realizing just when it was. There is no doubt that well-dressed windows make lasting impressions of high selling value.

The window should be spotlessly clean and redressed at least once a week. Study your windows with the idea of making the most of them. Sometimes a very little ingenuity will put a window all to the good.

There was an Eastern dealer whose hardware window was high, rather narrow and staring in appearance. He concentrated on the problem, and this is what he did.

He had a broad band of rich crimson two feet and a half deep, painted right across the top of that window. There was a gold band at either edge, outlined with black. On the red were the letters in gold and white "— For Hardware." It showed up about ten times as well as his weather-beaten sign over the door, and really put his store on the map. You couldn't look up or down the street without seeing it first. It just demanded attention. Besides that, it lowered his window and gave it much better proportions.

Seeing how well this plan succeeded a hardware merchant in a nearby city lowered his own windows with a border of prism glass in leaded frames. The effect was very rich and the prism glass lighted up beautifully at night.

CHARLES W. ASBURY DESCRIBES THE CONDITION OF LABOR IN EUROPE.

The perfecting of the means of communication and distribution has reduced the separation between civilized countries almost to the vanishing point. The economic problems of America have vital connections with those of Europe by reason of our rapidly expanding foreign commerce. Unavoidably, therefore, we are affected by the industrial questions which are agitating the old world. It is important that we get accurate information as to the various phases of the European situation, none of which is more urgent at this time than that of the labor problem. In this connection, it will be found helpful to read the following comments of Charles W. Asbury, president of the American Hardware Manufacturers' Association, who has just returned from the continent. He was a member of a commission sent abroad by our Government to investigate labor conditions overseas. Briefly his summary of the labor status of Europe is as follows:

"The industrial conditions of Great Britain are very unfortunate for her future development. There is a very complicated intricacy of trade unionism controlling the industries, as well as the coal mines and railroads. Unfortunately the economic fallacy of restriction of output is still practiced very largely. The theory upon which the rank and file of the workers operate is that the less work done by each worker leaves more work for the many workers. It is upon this theory that so much objection is raised to the installation and use of labor saving devices and machinery. Production under such methods is necessarily at high cost and when practiced in a basic industry, like coal mining, it necessarily affects the whole industrial trade fabric of the nation. Moreover, those lines of industrial activity which may be termed fundamental, such as the railroad workers, the mine workers and the transport workers, have been joined together in an alliance, known as the Triple Alliance. If direct action is taken by the Alliance the effect upon the nation would be exceedingly serious. It is conceivable that such a situation might well develop a formidable competitor of the State itself. It has been found almost impossible for the Government to restore all conditions affecting labor upon the pre-war standard and, as a consequence, restrictions on output are still continued to an unfortunate extent.

"It is feared, by some of the leaders of Britain's industries, that costs of production will be higher than those prevailing with the industrial competitors of Britain and that she will thus be placed in a position of future disadvantage. The economic situation confronting the nation is therefore causing some concern because if Britain is to recover from the shock of war it is necessary to obtain both thrift and high production. Generally speaking, the rank and file of the workers do not grasp this fact and it is suggested that the Government might pursue a policy of educating the workers to meet the national necessity but those in political life appear to be pursuing an opposite policy by creating commissions to inquire into the points of difference of every dispute, and to attempt to settle differences along equitable lines. This policy brings,

at once, into the great labor question, the political element and the question before commissions is likely to be one of political expediency rather than a question of principle on merit.

"It should be said, in all fairness, that the fault in these conditions does not lie exclusively at the feet of the workers. There are many conditions of employment which appear to be unfair to them, the chief of which is probably the fact that wages in Great Britain do not appear to have been advanced either as rapidly, or in total, as much as the increase in the cost of living. Such a condition is obviously unfair to the workers. If it be a fact that wages have not risen in harmony with the increased cost of living, it would appear as though many of the employers had not taken adequate steps to either avoid or correct such an unfairness.

"In France the chief problem is one of finance. The national budget of the nation has increased from eight billion francs before the war to twenty-three billion francs for the coming year. Land ownership in France is widely distributed and the people do not appear willing to approve a method of direct taxation. Furthermore, the problem of finance can not be intelligently considered until it is known, by the signing of peace, the amount of indemnity France will receive, and when and how it will be paid. Conditions there are in a very chaotic condition. The problems of the nation are so great that it is difficult to determine a starting point for their solution.

"France, of course, desires to produce and to sell, in order to stabilize the value of her money, but before she can produce she must reconstruct her means of production. In the meantime she is enforcing rather rigidly the import embargoes. Just when, and to what extent, these will be modified or removed has not yet been considered. Everything appears to be waiting upon the signing of peace.

"In Italy they are also confronted with a financial problem. There was created for the purpose of the war, an external indebtedness of two billion dollars and Italy does not quite see how she can pay the interest on her indebtedness, and, at the same time, create a proper sinking fund for its extinction. Some representatives of the Italian Government were greatly concerned about the rumor that the United States was to prohibit immigration for a period of four years. We were told that Italy had an income of eighty million dollars a year, represented by remittances made to relatives by Italian citizens working in the United States, and that she had an income from the Argentine Republic of fifty-five million dollars a year in the same way. It will be very readily seen that if Italy is to be deprived of these incomes her financial problems will become much more serious. Leading industries in the United States think that we need the kind of labor which Italy can supply for the development of our own resources, such as railroad construction and municipal work of various kinds, and, therefore, it would be mutually cooperative if we received proper immigration in sufficient quantities for our purpose and at the same time helping Italy in her readjustment program.

"The Commission of which I was a member accepted

the invitation of the French Government to be its guests on an inspection tour of northern France, in order that we might become familiar with the industrial destruction in that territory. What we saw there was very surprising. There were many cities and towns which had not been subjected to shellfire and to all intents and purposes these towns appear to be intact. Houses, stores and streets are in normal condition, except more quiet than usual. In the same town, however, all industries have been completely destroyed. In many places the machinery was removed intact to Germany. In other cases, where this was not practicable, the machinery was completely demolished. This action of the Germans appears to have been premeditated in cold blood and it seems to prove her intention of robbing France industrially in the hope that she (Germany) would be able to reap the benefit of the misfortunes of her competitors. If this destruction had been the result of military necessity there might have been offered some excuse, but as it is an explanation worthy of consideration would indeed be difficult.

"If you can be patient a few more moments I would like to refer to some very splendid work which I saw being performed by our own military authorities. At Thieacourt, which is just a few miles northwest of St. Mihiel, a site has been selected upon a gentle slope of ground for an American Military cemetery. It is very beautifully situated, having quite a vista over a large territory. The cemetery will contain 25,000 of our boys. Military authorities are now searching the battlefields for the graves of those who were hastily buried in the stress of conflict and for those which could not be properly buried, because of battle conditions. Among the latter are found many which have not been identified. All of these bodies are being tenderly handled and brought to the site of the large cemetery and there, all of the bodies are carefully examined for points of identification. The success of this work is illustrated by the fact that the day before my visit there were one hundred and seventeen bodies brought in and the identity of one hundred and seventeen was established; in other words, 100 per cent efficiency. Everything of any value, sentimental or material, which is found upon each body is placed in a bag which is properly tagged with the name, company and division of the man. These are returned to relatives at home, then the body is carefully placed in a box which in turn is carefully and properly tagged and put in its position in the cemetery for proper burial after a stake is driven to indicate the identity of every man. These stakes will later be replaced by proper headstones and the entire cemetery will later be greatly beautified. In the center of the tract there will be erected a very beautiful monument. I have thus briefly described one of several of such cemeteries in France and in the years to come they will be as valuable as Arlington is to our own country.

"Adopting the thought of Lincoln—the world will little care nor long remember what we say here but with those monuments it can never forget what they did there."

Put the customer first and make his satisfaction last.

OBTAINS PATENT FOR COMBINATION TOOL.

Under number 1,305,821 United States patent rights have been granted to Chresten Torben Madsen, Oakland, California, for a combination tool, described herewith:



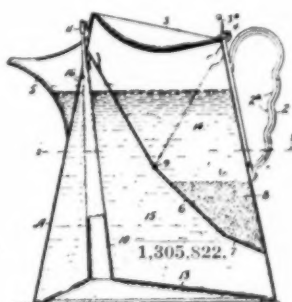
A tool having a handle provided with space sides and a slotted back, a substantially U-shaped cross piece extending across the space between the sides and spaced from the back and having its ends engaged with the outer faces of the sides, a spring connected to the cross-piece, a stop operating in the slot and in said space between the cross-piece and back, and a pivoted tool tensioned by the spring and cooperating with the stop.

WIRE COMPANY BUILDS NEW FACTORY.

The partnership of C. O. Johnson and Sons, Worcester, Massachusetts, manufacturers of fine steel wires, has changed the name to Worcester Wire Company, and is building a factory at Ludlow and Graham Streets, Worcester, Massachusetts. The new structure will be equipped with the latest machinery for the making of fine grades of wire; and it is the confident expectation of the firm that its products will be of even better quality than the present high standard of excellence.

PATENTS COFFEE POT.

Chresten Torben Madsen, Oakland, California, has obtained United States patent rights, under number 1,305,822, for a coffee pot described in the following:



A coffee pot comprising a container, a pocket formed interiorly of said container for the reception of coffee, said pocket having a perforated bottom, a screen cover hinged to the upper end of the pocket for swinging to either side of the center of the coffee pot to divide the same into two variable sized chambers, and means arranged exclusively within one chamber for maintaining a circulation of water through said screen and the perforated bottom formed in the pocket for the reception of the coffee.

PROGRESS RESULTS FROM ENTHUSIASM.

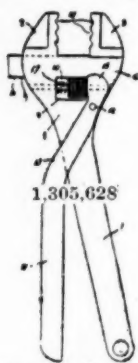
Enthusiasm is the lubricant that makes the wheels of progress go round. Hard work, minus enthusiasm, does not achieve the most complete success. Many men of superior ability are occupying positions of inferior merit because they lack that life-giving, vitalizing, stimulating elixir of enthusiasm. Enthusiasm wins the day.

PIONEER ARIZONA HARDWARE CONCERN MOVES TO LARGER QUARTERS.

So prominent a position has the W. J. Corbett Company achieved in the business affairs of Tucson, Arizona, that the Arizona Daily Star and the Tucson Citizen, morning and evening papers, respectively, devote a four-page supplement to an account of the firm's moving to new and larger quarters, with a history of its progress during the thirty years of its existence. The founder of the company, William J. Corbett, came to Tucson from South Carolina in 1877 and found one of his first jobs delivering papers for the Star. Afterward he went to work in the postoffice. Later, during the Indian outbreaks, he enlisted in the army and served through the Geronimo campaign, starting from Fort Lowell and serving at Fort Huachuca under Lieutenant, now Major General, Wood, who was then filling his first commission with the United States Army. At the end of his enlistment he returned to Tucson and engaged in the hardware business under the name of the W. J. Corbett Hardware Company. From the outset the firm had the wisdom to build up its stocks from standardized commodities of known quality. This fact, coupled with persistent and intelligent advertising, explains the continuous success of the company, so that today it is as distinctively institutionalized in the minds of the people of Tucson and surrounding territory as Marshall Field's in Chicago or Tiffany's in New York City.

PROCURES PATENT FOR A WRENCH.

Roland John Statham, Vancouver, British Columbia, Canada, has procured United States patent rights, under number 1,305,628, for a wrench, described in the following:



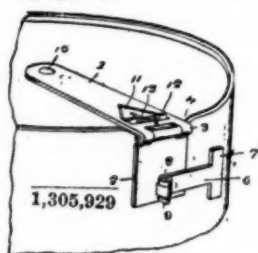
In an adjustable wrench, a head having a gap, a fixed jaw, a slack laterally slidable jaw having a tongue threaded on its lower edge passing through a gap in the wrench head, a rotatable worm normally engaging the threaded tongue and endwise movable in the gap, and a fulcrumed lever adapted when gripped with the handle to bear at its upper end above its pivot directly on the end of the worm and effect endwise movement of the same, said lever being arranged so that the point of contact of its upper end with the worm varies as the lever is swung inwardly around the fulcrum whereby an increasing gripping pressure of the jaws is exerted as the lever closes on the handle.

LEADERSHIP IMPLIES SELF-RELIANCE.

The man who is worthy of being a leader of men will never complain of the stupidity of his helpers, or the ingratitude of mankind, nor of the inappreciation of the public. These things are all a part of the great game of life, says Elbert Hubbard, and to meet them and not go down in discouragement and defeat is the final proof of power.

ACQUIRES PATENT FOR CAN OPENER.

Eugene E. Perrier, Mattawa, Ontario, Canada, has obtained United States patent rights, under number 1,305,929, for a can opener, described herewith:



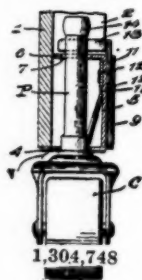
The combination with a can, of a can opener embodying a radius bar pivotally attached to the top of the can at a central point, an extension bar hinged to the outer end of said radius bar and movable to an arc of substantially ninety degrees, an operating handle hinged to said extension bar and adapted to be swung to an arc of substantially ninety degrees and a spring pressed cutter, having a hinged connection with said radius bar adjacent to the edge of the can.

BE PROMPT IN MAKING COLLECTIONS.

In the case of credit extended by merchant to customer, the obligation rests upon the latter. He is the one to whom a favor has been shown. There should be no hesitancy on the part of the retailer in asking for payment of that which is his due.

SECURES PATENT FOR CASTER LEG.

Under number 1,304,748, United States patent rights have been granted to Albert B. Diss, Newark, New Jersey, assignor to The Bassick Company, Bridgeport, Connecticut, for a caster described in the following:



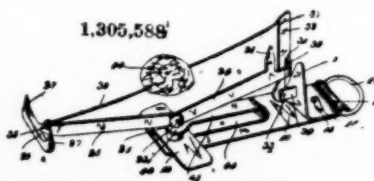
In a furniture caster leg mount, a foot having a back, a top and a bottom, the top and the bottom being perforated to receive the caster pintle, a clip having a plate secured to the back of the foot and having a pair of spaced spring arms extending over the top and a knob on the pintle engageable with the arms to limit downward movement of the pintle, said arms being capable of being spread to permit the passage of the knob upon the expenditure of force exerted on the pintle.

APPEARANCES ARE VALUABLE.

We cannot help looking up to the man who is well dressed and who carries himself well. Appearance does help a man to create a favorable impression upon the people he meets.

IS GRANTED PATENT FOR A TRAP.

Henry Cherep, Chaplin, Saskatchewan, Canada, has obtained United States patent rights, under number 1,305,588, for a trap described herewith:



An animal trap, comprising a base, a cylindrical standard arranged thereon, and a pair of levers pivoted in said standard, prongs formed at the extremities of said

levers, a spring on said base having a part movable longitudinally over said standard, and adapted to engage with said levers whereby they are closed, an arm pivoted near the end of said base, a detent formed integral with one of said levers, engageable with said arm, a flexible element extending between said detent and the other of said levers, and a lure on said flexible element, said detent adapted to be operated by a pull on said flexible element.

PATENTS A COMBINATION HAND TOOL.

George Byron Caldwell, Ottawa, Ontario, Canada, has secured United States patent rights, under number 1,305,587, for a combination hand tool, described herewith:

1,305,587



In an article of the class described comprising a combination hand tool and in combination, a handsaw blade having straight edge conformation on its back edge and provided on its sides adjacent its back edge with tabulated scales having characters to denote inch and fractional measurements, a handle therefore, means for securing the handle to the blade, the back or upper and forward edges of the handle having exact rectangular relation, metal plates having rectangular arms conforming in contour to the back or upper and the forward edges of the handle positioned on the handle adjacent its back or upper and forward edges, means for attaching said plates to the handle, tabulated scales on said metal plates having characters to denote inch and fractional measurements, there being transverse bores through the handle and portions of the metal plates and vertical and horizontal spirit levels in the handle located within said transverse bores.

OPPORTUNITIES FOR FOREIGN TRADE PRESENTED BY BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

The Bureau of Foreign and Domestic Commerce through its Special Agents, Consular Officers and Commercial Attachés is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

29653.—Motor cars, motorcycles, bicycles, and all accessories and household requisites of a general character are required by a firm in India. General catalogues are requested.

29654.—Catalogues, prices, and samples are required by a person in Poland with a view to introducing American goods into that country.

29663.—A company in England, having recently established an office in this country, desires to communicate with manufacturers of motor cars and accessories. Reference.

29664.—An American export company, which has established offices in Cuba and Columbia, is about to establish also an office in Chile, and wishes to represent American manufacturers in these countries. References.

29646.—An agency is desired by a man in the Canary Islands for the sale of hardware, wire nails, etc. Correspondence should be in Spanish. References.

29696.—An export commission firm in the United States having offices in Colombia desires to extend its trade in the sale of heavy hardware, such as barbed wire, steel bars, and

shapes. It proposes to open sample rooms in connection with its offices in Colombia and sell direct to importers.

29698.—The purchase of hardware, fertilizer, shooks and staves, etc., is desired by a firm in Guadeloupe. Quotations should be given f. o. b. American port. Correspondence should be in French. Reference.

29699.—An agency is desired by a firm in Egypt for the sale of a general line of agricultural implements, including tractors. Correspondence may be in English. References.

29704.—Hemp binder twine and packing twine in very large quantities is desired by a firm in Denmark. Quotations should be given f. o. b. New York. Terms, cash. References.

29706.—A manufacturer in Spain desires to assume the management of any American commercial concern, or manufacturing company desirous of establishing itself in that country. Correspondence should be in Spanish. References.

COMING CONVENTIONS.

The Texas Hardware Jobbers' Association, Galvez Hotel, Galveston, Texas, July 11 and 12, 1919. R. F. Bell, Secretary, 320 Broadway, New York City.

National Retail Hardware Association, William Penn Hotel, Pittsburgh, June 24, 25, 26 and 27. Herbert P. Sheets, Secretary, Argos, Indiana.

Mississippi Retail Hardware and Implement Association, Agricultural College, July 8, 9 and 10, 1919. D. Scoates, Secretary, Agricultural College, Mississippi.

Minnesota Retail Hardware Association, St. Paul Auditorium, St. Paul, Minnesota, February 17, 18, 19 and 20, 1920. H. O. Roberts, 1030 Metropolitan Life Building, Minneapolis, Minnesota.

Ohio Hardware Association, Hotel Gibson, Cincinnati, Ohio, February 24, 25, 26 and 27, 1920. James B. Carson, Secretary, Dayton, Ohio.

RETAIL HARDWARE DOINGS.

Kansas.

E. P. Moulton has sold his hardware store at Neodesha to C. R. White.

The Norway Hardware Company, Norway, has purchased the hardware stock of P. Pehrson.

The new Maxwell hardware store at Iola is ready for occupancy.

C. B. Gillespie has purchased W. F. Groves' interest in the hardware store at Valley Falls.

H. S. Walter has sold his hardware store at Wakefield to W. L. Marshall.

J. H. Harris and Will Harris have bought the Burke and Davis hardware business at Seneca.

Missouri.

The hardware firm of Hunter and Boyer at Hartville has been dissolved, L. R. Boyer continuing the business.

John G. Hales has opened a hardware store at Perrin.

The hardware store of L. F. Mansfield at Wheatland was badly damaged by fire.

The Yoder Hardware and Supply Company, Neck City, was incorporated for \$5,000.

J. F. J. Safarik and Harry Klingensmith are now proprietors of the Big Four Hardware store in Princeton.

Nebraska.

R. D. Wood has sold his hardware store at Doniphan to F. A. Glazier.

W. R. Barger has bought the stock of L. and S. Larimore at Benkelman.

Babson and Whitte have purchased W. A. Compton's stock of hardware and implements at Beatrice.

O. Von Strohe will open a hardware store at Lincoln.

North Dakota.

John Pickert and Carl Sword will open a hardware business at Dunn Center.

South Dakota.

The Farmers Lumber and Hardware Company, Loyalton, has been incorporated for \$20,000 by D. B. Wilson, Glenn B. Gleason and Robert L. Sendert.

Tennessee.

The Arnold Hardware Company, Livingston, has increased its capital from \$12,000 to \$24,000.

Texas.

W. A. Walker and H. O. Leigh will establish a hardware store in Huntsville.

Washington.

P. T. Peterson has sold his hardware store at Mansfield to Ira D. Smith.

Wisconsin.

Denis Tourigny has sold his hardware business at Neillsville to E. S. Laabs and P. O. Powers.

A. C. Fuge hardware store, West Bend, is building an addition.

AUTOMOBILE ACCESSORIES SOLD BY HARDWARE DEALERS

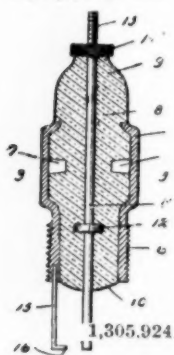
The Associate Manufacturing Company, New Britain, Connecticut, has been incorporated to make automobile accessories and equipment with a capital stock of \$100,000. The incorporators are W. E. Taft, Charles E. Hadfield and H. E. Kingsley.

PROTESTS REVENUE RULING.

A protest against new rulings by the Internal Revenue Bureau that a motor truck chassis is a "part" and as such taxable at five per cent has been made by the National Automobile Dealers' Association. The ruling is effective February 25, although just announced. If adhered to it will mean the loss of thousands of dollars to dealers who have sold motor truck chassis between February 25 and May 1, at a three per cent war tax, adhering to the interpretation of the Internal Revenue Bureau in 1918.

SECURES PATENT FOR SPARK PLUG.

Laroy C. Monismith, Glenvil, Nebraska, has obtained United States patent rights, under number 1,305,924, for a spark plug described herewith:



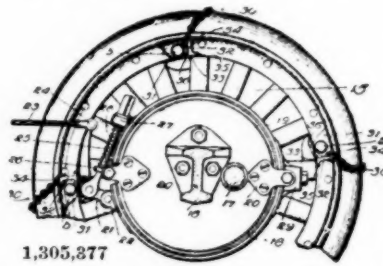
A spark plug comprising an outer shell provided at one end with a threaded portion, a plurality of spaced inwardly extending projections formed on the inner periphery of said shell and arranged in circumferential series, an insulating core of porcelain molded within said body and engaging the entire internal periphery thereof and having both ends extending beyond the ends of the body, the ends projecting beyond the threaded end of said shell being a section of a sphere, a contact member extending centrally of and embedded within said core and having its active end extending an appreciable distance beyond the partially spherical end of said core, a retaining flange formed on said central contact member intermediate its ends whereby longitudinal displacement thereof will be prevented, and a contact member extending from said shell and having a laterally directed end extending toward the side of said first named contact member adjacent its end.

USE THICK BRUSH TO REMOVE DUST.

Most hardware dealers sell paint brushes. A new use for such brushes is suggested to retailers who deal in automobile accessories whereby an increase of sales may be effected. Much superior to waste for removing dust from a motor is a painter's brush that is thick and soft. There are so many small projections about a motor that the use of waste is quite apt to serve as an incentive to bad language; and little else.

INVENTS AN ANTISKID DEVICE.

William H. Krug, Oshkosh, Wisconsin, has been granted United States patent rights, under number 1,305,377, for an antiskid device, described herewith:



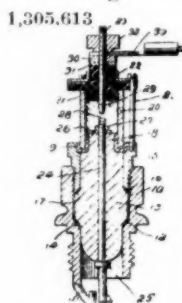
The combination with an antiskid chain of means for securing one end of said chain to a wheel, comprising a plate having a key-hole opening, the slot of said opening being inclined from one face to the other face of said plate, and a coupling member co-acting with said key-hole slot to secure the end of said chain to said plate.

BUILDS NEW FACTORY IN CANADA.

Jobbers, dealers, and motorists in Canada will be able to save from 40 to 70 per cent in tariff charges on the "Norwesco" line of chemical automobile utilities as the result of the establishment of a new factory in Montreal Canada, by the Northwestern Chemical Company of Marietta, Ohio. The products of this Company comprise Se-Ment-ol, the radiator cement, Skalex, the radiator cleaner, top dressings, shellac, valve grinding compound, and other chemically correct utilities for automobiles. All of the products will be placed on the Canadian market in Imperial measure containers.

MICHIGAN MAN INVENTS SPARK PLUG.

Under number 1,305,613, United States patent rights have been granted to Wiley Albert Latshaw, Clarion, Michigan, for a spark plug described in the following:



In a spark plug, the combination of a shell, a barrel fitting in the shell, a gland nut carried upon the upper end of the shell and engaging the barrel to bind the latter in the shell, a glass cylinder fitting upon the upper end of the barrel, a U-shaped packing ring fitting about the lower end of the cylinder and against the barrel, a fibrous head fitting upon the outer end of the glass cylinder, screw rods connecting the head to the gland nut for binding the head and the barrel against the opposite end of the gland cylinder, a fixed electrode section in the barrel, a movable electrode section arranged within the head and adapted for adjustment toward and from the upper end of the fixed electrode section, and means for locking the movable electrode section in the head.

ADVERTISING CRITICISM AND COMMENT

Helpful Hints for the Advertisement Writer

Students of the mind's processes know that thoughts and emotions act through association of ideas. A pair of baby shoes encountered in rummaging through an old trunk will bring a flood of memories, sad or pleasant as the case may be, to the gray-haired mother. Visions of other days when life was full and bounding come to her. She

sees again the dimpling cheek and laughing eyes of her boy. Countless little details return clearly into the focus of her imagination. The finding of the tiny shoes is like the turning of a switch which lights up all the recesses of bygone years.

The directive power of association of ideas is operative in every phase of life—in merchandising no less effectively than in the awakening of tender recollections. It is utilized with more than common cleverness by the Mills Hardware Company, Limited, in the advertisement reproduced here—

with from the *Hamilton Spectator* of Hamilton, Ontario, Canada. The explanatory headline is not followed by any disappointment in the body of the text. The principal purposes for which brushes are used are clearly enough mentioned and illustrated to suggest other purposes not specifically stated in the advertisement. That is to say, a sufficient variety of brushes is shown to bring to mind through the workings of the association of ideas other brushes not named in the copy.

Indeed, it would be difficult to imagine how anyone reading this comprehensive announcement could fail to derive therefrom the impression that the Mills Hardware Company, Limited, is fully prepared to supply "a brush for every purpose." The mechan-

ical arrangement of the advertisement—which in the original measures 10¾ by 12¼ inches—gives unmistakable evidence of careful planning coupled with skill, judgment, and experience. Terse but clear descriptions, free from technical terms, are joined to illustrations which have the merit making it easy to

Agents For
Yale Hardware

MILLS HARDWARE NEWS

King Street Store, Regent 50 TWO STORES ONLY Barton Street Store, Regent 615

A Brush for Every Purpose

Agents For
Low Bros. Paints

Flat Varnish Brushes



Flat Varnish or Paint Brushes. Used for ordinary brush work. Made of good bristles with nickel ferrules. Prices: 25c, 35c, 50c.

Bannister Brushes



This is an invaluable brush for getting into small places and corners. It is made in either stiff or soft bristles, with a varnished handle. Prices: 25c, 35c, 75c, \$1.

Shoe Brushes



This is a brush that is needed in every house. This shoe brush is made in different qualities, with oval or oblong block, all are fitted with handle and comb. Prices: 25c, 35c, 50c, 75c.

Kalsomine Brushes



We have a fine selection of Kalsomine brushes of all grades to suit either the painter or home use. Prices: 45c, 60c, \$1, \$2, \$3.50.

Flat Varnish Brushes



Finest quality Chinese black bristle brushes. Bristles are rubber cement set and cannot come out, absolutely guaranteed. Prices: 25c, 35c, 75c, \$1, \$1.50.

Scrub Brushes



We have a good assortment of Scrub Brushes, with either white fiber or horse hair, different shaped block, with or without wings. Prices: 15c, 25c, 35c.

Shaving Brushes



The man who shaves himself likes to use a good brush. We have Simon's extra soft Rubber Shaving Brushes. Try one now. Prices from 25c, 35c, 75c, \$1 to \$3.50.

Paperhanging Brushes



Selected quality bristles, two rows. Patent wire sewed. Not affected by swelling or drying of block. Prices: 25c, \$1, \$1.50, \$2.50.

Flat Paint Brushes



Flat Paint Brushes, made of Chinese bristles, with metal ferrules and varnished handles, used principally for painting walls, ceilings or large surfaces. Prices: 25c, 35c, 75c, \$1, \$1.50 to \$2.50.

Oval Paint Brushes



Great Chinese Brushes, selected black China bristles, nickel ferrules. Thoroughly reliable. We can recommend these brushes to either the master painter or the amateur. Prices: 25c, \$1, \$1.25 to \$4. Brushed \$1, \$1.25, \$2.50.

Oval Sash Brushes



Oval sash brushes made of the Chinese black bristles, set in metal ferrules with varnished handles, used for painting sash or getting at hard to reach places. Prices: 25c, 35c, 50c.

Paint Dusters



Painters' Dusters all wire bristles, good long Chinese bristles. A solid set brush for use who prefer a round pattern duster. Prices: 25c, 35c.

Window Brushes



The easiest way to wash windows is with a regular round window brush. It can be done quicker and better with this brush. Prices: 25c, 35c, 45c. Utility Window Brushes, Price 45c.

Waxing Brushes



If you have hard wood floors we have just what you want to keep them in condition. This weight of wax brush is the article—15-25 size. Price \$2.25. 25-35 size. Price \$4.50.

Wire Brushes



Tempered Carbon Steel Wire Brushes, securely wired to the block. It is an excellent brush for cleaning and preparing hardwood floors for refinishing, also for cleaning metal surfaces. Prices: 45c, 75c, \$1.

Corb Brooms



Specialty selected broom corns, well bound, varnished hardwood handle, securely fastened. These are the best grade brooms. Prices: 50c, \$1, \$1.50, \$2.25.

Floor Brooms



This quality Bristle Floor Broom, complete with long handle. One of these brooms is just what you want for those nice hardwood floors. Bristles are soft and will not scratch polished floors. Prices: 45c, 90c, \$2, \$3.75 to \$4.50.

Tar Roofing Brushes



Well selected all black bristles, cement set and wire bound, securely fastened into a hardwood block. This brush is very useful for painting and tarring patent roofings. Prices: 2 hand 50c, 3 hand 60c, 4 hand \$1.00.

We Have Only the Best Makes of Brushes and Brooms

Whisks	25c, 35c, 50c	Sink Scrub	10c
Cloth Brushes	50c, 75c	Laundry Scrub	10c
Stove Brushes	15c, 25c, 35c	Bowl Brushes	35c, 50c
Stove Dusters	10c, 20c	Bottle Brushes	25c
Nail Brushes	5c, 10c, 20c	Silver Plate Brushes	40c
Vegetable Brushes	15c	Auto Spoke Brushes	55c
Cup Brush	40c	Hearth Brushes	75c
Radiator Brushes	40c	Bronzing Brushes	25c, 40c

MILLS HARDWARE CO. LIMITED
Next Low's Theater — and — Barton Street East

visualize the articles. The compiler of the advertisement has succeeded in gathering a maximum number of details without sacrificing the explicitness of any single item or crowding the space to the point of tiring the eye of the reader. The crowning virtue of this advertisement is the complete quotation of prices with every brush.

* * *

When the other fellow stops his advertising or cuts it down, your advertising does not have to fight competition so hard. It has a better chance to make good, and get the cream of business.—Service.

HEATING AND VENTILATING

GIVES COMPARATIVE COST OF WARM AIR AND HOT WATER PLANT FOR EIGHT ROOM HOUSE.

The majority of the people have not yet been sufficiently educated to bestow first consideration upon service and quality in preference to price. Consequently, in the campaign for a wider use of warm air heaters, comparative costs must still be used as a basis of preliminary argument. It then becomes an easy matter to pass to other and more potent reasons in favor of the warm air heater, such as health, comfort, reliable and continuous service, and the like. The following address delivered at the convention of the National Warm Air Heating and Ventilating Association in Columbus, Ohio, June 11, 1919, is, therefore, of practical value to the trade in all its branches:

Address on the Comparative Cost of Warm Air and Hot Water Plant for an Eight Room House, Presented at the Annual Convention of the National Warm Air Heating and Ventilating Association at Columbus, Ohio, June 11, 1919, by W. E. Pratt Research Associate in Warm Air Furnace Research Engineering Experiment Station University of Illinois, Urbana.

"Hundreds of thousands of heating plants are installed every year and millions of dollars are spent in heating equipment for small and medium sized residences. What kind of heating goes into these types of buildings? It has been said that approximately 80 per cent of them are equipped with some kind of warm air heater. The rest are equipped mainly with heating systems using direct radiation.

"Certainly comparative cost is today the largest factor in explaining the wide use of the warm air heater. This paper gives this comparison between warm air heating and direct radiation heating in a typical house—hot water heating being used as it is perhaps the most common.

"The warm air heater to heat the 8 room house to 70 degrees Fahrenheit in zero weather, must have at least 737 square inches free area across its most restricted section or sections, and must be capable of raising the temperature of the air entering the bottom of the warm air heater at 65 degrees Fahrenheit from the recirculating ducts, high enough so that the air leaving the registers will average about 178 degrees Fahrenheit. The first floor register temperature will be above this and the second floor register temperature will be below it, as there is a greater heat loss to the second floor due to the longer air travel. Furthermore, the warm air heater must be capable of accomplishing this on a firing period of not shorter than eight hours with hard coal.

"The tests at the University to date indicate that a 27 inch or 28 inch firepot warm air heater of the

ordinary construction will fulfill these conditions on a combustion rate of approximately 5.5 pounds coal per square foot of grate surface, and with a chimney draft of about .06 inch water.

"The cold air supply for the warm air heater is taken from two different points within the building. The grilles are of oak and are set flush with the floor. The grille in the hall is placed near the stair well and is located near the inside wall on account of needed head room at the entrance to the coal bin. The outer grille is placed in the dining room near the inside wall. This position was chosen in order to make head room in the basement for a passage to the rear of the cellar from the laundry door. This also makes the duct much shorter than if it was placed near the outside wall, which is very desirable. The area of the two cold air ducts is approximately equal to the combined area of the outlets in the bonnet.

"The warm air register in the dining room is placed near the ceiling so it will not disturb the air entering the cold air grille. In fact, this position of the register will materially aid the circulation. With the usual well constructed windows, no cold draft will be felt across the floor to the cold air grille.

"Two trunk lines are used in the warm air piping. It should be noticed that these each serve one first floor and one second floor room with the second floor stack served last. This serves to increase the air flow towards the first floor register, and some friction loss and heat loss is avoided, by this arrangement.

"The register serving the hall and living room is a double headed baseboard register. It may be remarked that one-half the area of the 14 inch leader supplying this register is not sufficient, according to the figures, to heat the hall to 70 degrees Fahrenheit. However, the hall is not required to be as warm as the living rooms in any case, but actually there will be a greater amount of heat delivered into the hall than the figures show since there will be less heat loss and less friction loss in the large 14 inch pipe than if the air was delivered in two separate leaders.

"Electro plated registers are specified except in the kitchen. Three ply asbestos paper covered with one ply 14 pound asbestos paper is figured for the insulation of all leader pipes. This insulation costs approximately \$30.00 more on the selling price than the ordinary covering of one thickness of asbestos paper. However, since hot water pipes in the basement are invariably covered with at least as much insulation as this, with not much higher temperatures than exist in the warm air leaders, and since this is a comparison of cost of the two heating systems, it is considered only fair to figure this extra covering on the leader pipes.

"A very interesting comparison in the following figures is in the weights of the iron and steel that go into the respective systems. This great difference in

the weights of the two types of heating systems was one of the big factors that influenced the War Department to use Warm-Air for heating the cantonment barracks.

The cost figures in both cases have been carefully checked by heating contractors in the heating business.

Warm-Air Heating Cost and Selling Price Estimate.

Item—	Weight—	Cost—
28" Furnace (cased).....	1,700 lb.	\$145.00
Warm Air Pipe and Fittings.....	335 lb.	81.85
Cold-Air Ducts and Connections..	165 lb.	15.75
Smoke Pipe	50 lb.	4.55
Registers and Cold-Air Grilles.....	60 lb.	35.00
Insulation	100 lb.	22.50
	2,410 lb.	\$304.65
Freight and Cartage.....		8.00
		\$312.65
Labor		45.00
		\$357.65
Overhead Expense @ 15 per cent..		63.12
		COST \$420.77
Profit @ 15 per cent.....		74.23
		SELLING PRICE \$495.00

Hot-Water Heating Cost and Selling Price Estimate.

ITEM—	Weight—	Cost—
Boiler (1,025 square feet top feed)	1,000 (estimated)	\$117.60
Pipe and Fittings.....	1,000	93.40
Expansion Tank	200	10.43
Smoke Pipe	25	4.50
580 square feet Radiation....	4,000	196.74
Insulation	50	27.08
	6,275 lbs. (estimated)	\$449.75
Freight and Cartage		18.60
		\$468.35
Labor		105.00
		\$573.35
Overhead expense @ 19 per cent		134.49
		COST \$707.84
Profit @ 15 per cent.....		124.91
		SELLING PRICE \$832.75

"If the radiators are too small, the house can never be heated in cold weather as the temperature of the radiators will never go much over 180 degrees Fahrenheit in an open tank system. This means that the fire will be pushed to the maximum in all the cold weather, causing waste in fuel and a quick depreciation of the boiler and may result in a broken section in one of the coldest cold snaps. A trap in one of the hot-water lines may hardly be noticed but will result in the failure to heat of one or more of the radiators and may be the cause of a frozen pipe and a broken boiler. The expansion tank may be the cause of a broken section of the boiler, if put in too cold a place and is frozen, or the vent may be run to a cold place and get frozen. Practically all these troubles show up in the coldest weather, and the result is a cold house and possibly more damage before the cause of the trouble can be remedied.

"If the same amount of ignorance or even more ignorance is displayed in the installation of a warm-air heating system, there is seldom any more harm done than burning too much coal. Nothing can happen to a warm-air heating job that will cause it to be laid up in the coldest weather when it is most needed and when it is usually hardest to get labor to do a rush repair job. However, this is no excuse for letting warm air heaters be improperly installed, although

this enormous capacity for overload is the reason why so many tin butchers can continue to stay in the business.

"It might be mentioned here that the loss up the chimney from an ordinary house-heating plant is about three times the normal loss when the draft is turned on and the check is closed. Tests at the University of Illinois show that the warm-air heater responds to the draft very quickly and picks up its rated load from a cold heater in as little as ten minutes if given full draft, with a charge of wood for kindling the coal. When a heating plant is hand operated it may be safely assumed that on the average of twice a day the temperature has fallen so far by forgetfulness on the part of the occupants of the house as to require the draft being turned on. A reasonable assumption, it is believed, is that the hot water plant will require the draft on three times as long as the warm-air plant due to the slower heating of the water and the lower circulation of the heat into the rooms from the radiators. The much larger loss out the stack, from this one cause alone, is apparent in the case of the hot water heater.

"The warm-air heating system has a wonderful opportunity for adding moisture to the air in the building being heated, and distributing it evenly. Although with properly humidified air a lower temperature may easily be maintained in a house, this does not effect a saving in fuel unless the heat for evaporating the moisture would otherwise have been wasted. Undoubtedly the position of the water evaporating pan on a warm air heater to best effect this saving, is opposite the firepot where the heat is intense, and where a greater proportion of this heat is wasted by radiation into the cellar. Putting the pan higher takes a greater proportion of the heat, necessary to evaporate the water, from heating surfaces that should normally give up the greater portion of their heat to the air passing up to the rooms to be heated. Also the small buoyant effect of the humidified air through the distance the pan was raised is lost.

"We have now come to the time when warm air heater manufacturers should make the most of this very important feature of warm-air heating—the possibility of humidifying the air—and make it an actuality. We have gone past the point where this may be considered wholly altruistic. The manufacturer who makes a selling point of his humidifying apparatus, providing it has merit and will fulfill the claims made for it, will most certainly reap the harvest waiting for manufacturers whose heating systems are so equipped. To illustrate the interest that the public is taking in humidifying apparatus, a large instrument manufacturer reports that the sale of humidity measuring devices and humidistats has been growing beyond all belief. Not only that, but we may soon expect to see legislation compelling the installation of heating and ventilating equipment in public buildings that will supply a relative humidity as high as 40 to 50 per cent. New York State now requires 35 per cent relative humidity in schools, and Mr. Woods the chief of school grounds and buildings, told the writer nearly two years ago that this was simply a starter, and that the requirements would be made higher as soon as the public was a little

more educated on the needs of proper humidification. In New York State alone there was needed two years ago 10,000 school room heaters that would comply with the law.

"The advantages of the warm-air heating system in small and medium sized houses are so apparent, that a well directed educational campaign backed by authentic data will put warm-air heating on a higher plane than many of us think possible, and warm air heating will approach the standard that Dr. Hill stated last year he hoped would sometime prevail—that when an owner was given a bid on a hot water job and he wanted to kick about the price, he would say "why for a little more money I could get a warm air, heating, ventilating and humidifying system."

"Now is the time to lay your plans for active propaganda work along these lines. Building is picking up all over the country as more and more people begin to realize that prices are not coming down, since labor is going to retain the high wages. The American Architect in a letter to the writer under date of May 16, 1919, states that there is an approximate shortage of 1,000,000 houses. This shortage to make up, coupled with the normal building program of 385,000 residences a year, will make for very prosperous activity in the warm air heater industry for the next five to ten years."

EMBODIES TEN IMPROVED FEATURES.

The Meyer Furnace Company of Peoria, Illinois, has put on the market the new Weir Warm Air Heater, as depicted in the illustration herewith. This heater embodies ten points of improvement, some of



New Weir Warm Air Heater, Made by the Meyer Furnace Company, Peoria, Illinois.

them minor details while others are vital. They are as follows: There is a high water pan where more heat evaporates more water—thus resulting in more moist warm air. The double enlarged feed door admits big chunks and keeps in the smoke and soot. The doors before the shaker ports are ground fit, which

means no leaks. There is an extra heavy double casing ring at the bottom, with an extra steel ring over the casing.

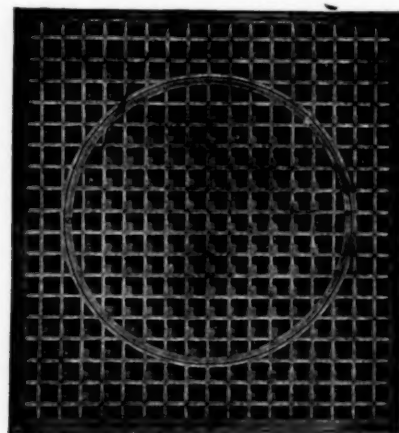
The Company states that the invisible air-and-gas-tight "tongue-and-groove" joint from the front to the main drum is absolutely tight. The flanges on the fire pot are wider, thus giving more air space to heat the air that enters the fire pot to help burn gas and soot. Installations are made easy by the adjustable support for the extra heat drum. The new heat deflector compels the passage of heat and the improved design is self-cleaning and more efficient. There is an improved type smoke outlet combined with the check damper and clean-out that is easily cleaned. There are no joints, the drum being welded into one piece of steel with oxy-acetylene welded seams; and in this way there is said to be no possibility of leakage. Those interested should address the Meyer Furnace Company of Peoria, Illinois, for more information, price list, etc.

PLANS A WARM AIR HEATER SHOP.

Having completed arrangements for establishing a warm air heater and sheet metal shop under the name of the Aberdeen Furnace Company, C. W. Rand and S. R. Milbrandt of Aberdeen, South Dakota, want to receive catalogs, price lists, and descriptive literature from manufacturers and jobbers. The address of the new firm is Aberdeen Furnace Company, 918 South First Street, Aberdeen, South Dakota.

GRATINGS GIVE DOUBLE SERVICE.

The gratings shown herewith, which are made by the Tuttle and Bailey Manufacturing Company of



Duplex Gratings, Made by Tuttle and Bailey Manufacturing Company, New York City.

New York City, are for pipeless warm air heaters. They are designed to give double the amount of service of the old single type of grating. These gratings come in sizes from 20 x 22 to 45 x 45 and will correspond to collar sizes from 14 to 36. They have been brought to their present standard of efficiency by repeated experiments and are constructed of high grade durable material. Pipeless heaters are known to be in great demand throughout the country, having taken the place of base burner stoves to a great extent. These heaters are excellent in their own sphere and the Tuttle and Bailey Manufacturing Company advises installers of pipeless heaters to make them give the best possible service by using the duplex gratings. Those interested should secure price lists and further information by addressing the Tuttle and Bailey Manufacturing Company, 52 Vanderbilt Avenue, New York City.

FIRE POT HAS LARGE CAPACITY.

The fire pot in the Peerless Warm Air Heater, made by The Peerless Foundry Company of Indianapolis, Indiana, is eighteen inches deep and has a large coal-holding capacity so that it is not necessary to fire the heater frequently. It is lined with circular rows of fire brick or may be entirely cast lined if desired. Either type has the hot blast feature. The bricks have vertical grooves in back to permit heated air to rise and serve as a hot blast as it emerges over the top of the brick. The Peerless Foundry Company states that



Peerless Hot Blast Fire Pot, Made by The Peerless Foundry Company, Indianapolis, Indiana.

the special hot blast brick offers all the advantages of cast iron fire pot liners but does not burn out when ashes pile up against them.

The air blast is heated much hotter than in the larger air spaces of cast liners. A hot blast will combine with smoke and burn it where an air blast will not. The bricked fire pot is also said to prevent the intense heat radiation obtained from unlined fire pots so that the air is not dry and parched from overheating. The manufacturers claim that this fire pot is inexpensive to keep in repair. The fire brick will stand an enormous degree of heat. They claim that steel and cast iron can be melted in a heater lined with these bricks. The Peerless Heater is made of Armco Ingot iron, boiler-riveted. Dealers are advised to write to The Peerless Foundry Company, 1853-1955 Ludlow Avenue, Indianapolis, Indiana, for its literature and further details.

ROBINSON CRUSOE IS GOOD EXAMPLE.

Robinson Crusoe in the story found a few grains of seed that had escaped ruin in the wreck.

He hankered for a sup of porridge, but he put off the indulgence and planted the seed.

At the year's end he had enough to make a handful of cakes that he craved. But he put off the indulgence and planted again.

At the second year's end he had enough to enjoy and still a plenty for seed.

Once he got ahead of his needs, there was no limit to what he could raise.

Every man who has his way to make is living on

a Crusoe's island. He can eat his seed in one mouthful or save it and have all he wants.

Once he gets ahead of his needs, the returns come faster and faster. Waiting for harvest is tedious. But it pays if it is done through War Savings Stamps.

SEEKS ADVICE ON COOLING PROBLEM.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

I am sending you a sketch of an ice box built in a four apartment house. It will not cool the different compartments. The lower ones get fairly cool but the upper ones do not cool at all. The lower chamber is perfectly tight but on one side of the upper, I

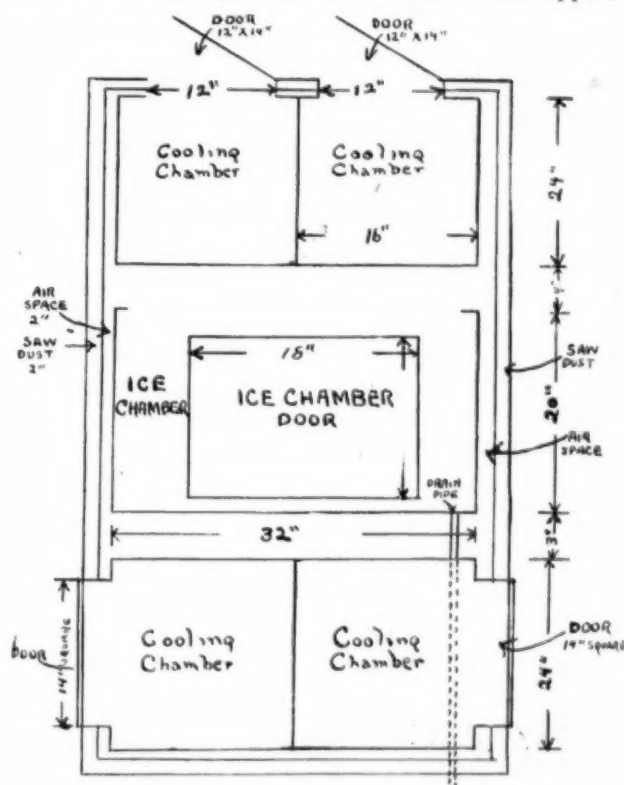


Diagram of Cooling Apparatus.

have cut one hole in the bottom and another toward the top, but it did not help. These boxes are 32x30x24 inches, except the center one, which is 20 inches high.

I would be pleased to hear from some one that has had some experience in that line, stating what changes could be made. Also I would like to know about how much ice should be put in at one time.

SUBSCRIBER.

East Moline, Illinois, June 18, 1919.

PROGRESS KEEPS PACE WITH TRUTH.

Life is progress—perpetual adaptation to new conditions. The apparent excellence of a result actually attained, the mistakes and errors involved in imperfect efforts to advance to better results, must not be allowed to obscure our view of this truth.

When you get into a tight place and everything goes against you, till it seems as though you could not hold on a minute longer, never give up then, for that is just the place and time that the tide will turn.

—Harriet Beecher Stowe.

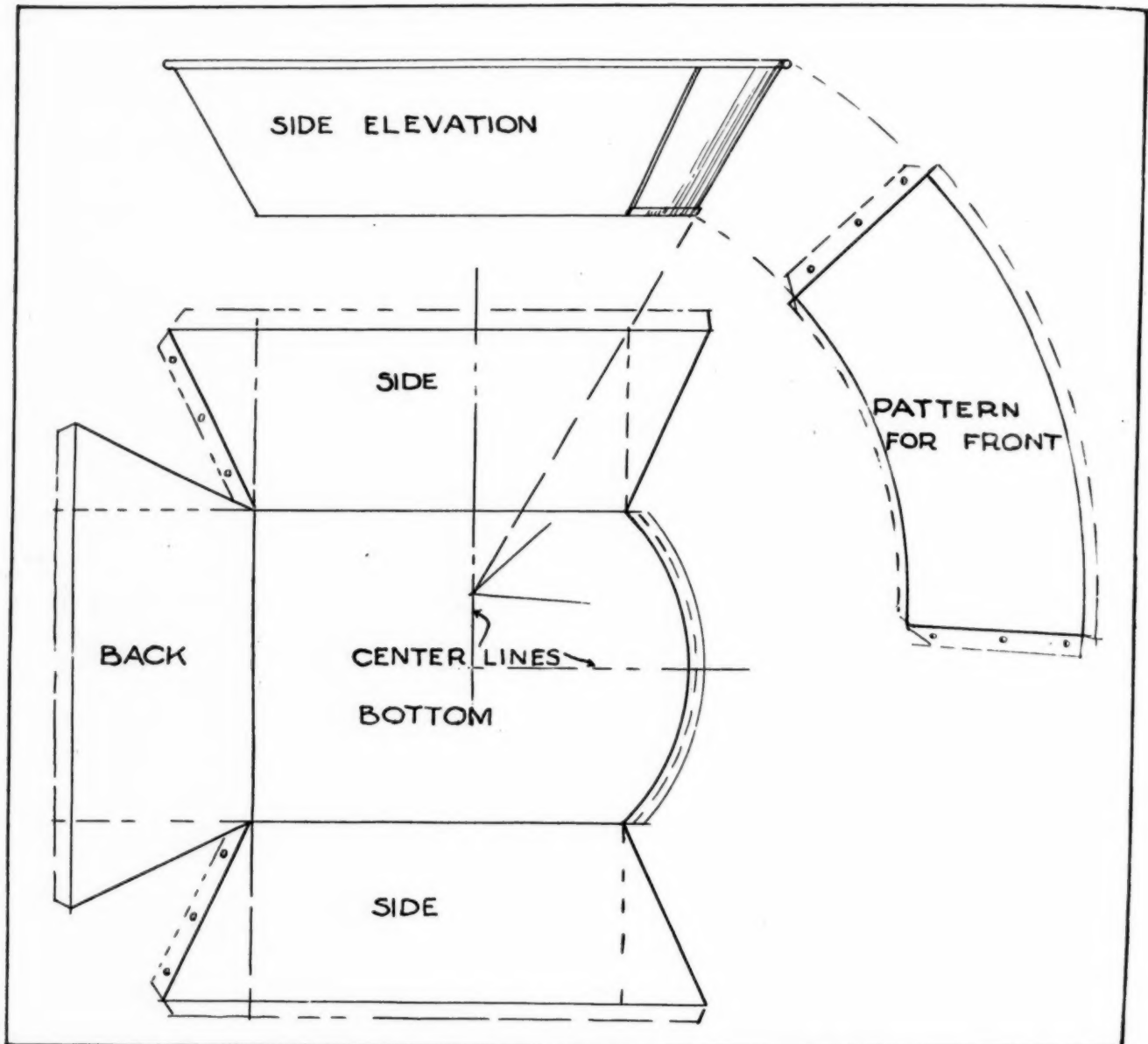
PRACTICAL HELPS FOR THE TINSMITH

PATTERNS FOR ROUND NOSE ASH PAN.

By O. W. KOTHE.

In the Fall of the year sheet metal workmen meet with considerable stove work, and some of this work

pattern and extend the side line until it meets the center line erected from the center from which the round front was described. This gives the radius for describing the pattern for front. The lower arc is made equal in length to the distance of the inner arc in



Patterns for Round Nose Ash Pan.

requires the making of ash pans. The style here shown has given many workmen considerable trouble and so it will be of interest. Observe the bottom is laid out first after deducting the wire and the flare so as not to get the pan too large. After the bottom add the back and sides measuring the flares as shown. The round front can be described from the center shown. Now on a line in a vertical position above the furthest part of the round front draw the side elevation so the bottom corresponds with the pattern. Measure the flare so it corresponds with the rest of your

pattern for bottom. The side lines are then projected to the center and laps are allowed. This pattern can be either locked or riveted as the workman desires. The wire edge should be allowed equal to two and a half times the thickness of the wire while the handles can be placed to suit.

Guard your personal credit and habits as every bank and commercial agency will inquire into them, and any false step you take is sure to be recorded against you.

PRIZES ARE GIVEN TO INDUSTRIAL GRADUATES BY NEW YORK CITY SHEET METAL CONTRACTORS.

The future of the sheet metal industry depends upon the enlightenment of the people engaged in its operations. The importance, therefore, of technical education for workers and employers can not be overestimated. Accurate knowledge and skill are the results of study and training. Several trade schools in New York City include courses in sheet metal work, notably the Harlem Vocational School, the New York Trade School, and the Bushwick Evening Training School. Thanks to the liberality of the Employers' Association of Roofers and Sheet Metal Contractors of New York City, prizes were distributed among the leading graduates of these institutions this month in recognition of their work, both theoretical and practical. In each of the schools mentioned, a gold medal was awarded to the student who displayed the greatest proficiency in practical sheet metal work, and a silver medal to the graduate showing the most skill in pattern drafting.

In the New York Trade School, Emery A. Sterkhardt, Jr., won the gold medal and Charles G. Numder the silver medal. Honorable mention was awarded to Charles McGraw, Malcolm E. Larson, Stephen Sawchook, Joseph Sommers, and Charles Praskac.

The gold medal for practical work in the Harlem Vocational School was won by Arthur Mahoney, while the silver medal for pattern drafting was given to Anthony Commerano. Deserving of mention for excellence are Aldo Belluzi, David Brand, Paul Blum, John Morris, Paul Malarik, Julius Flemming, and John Chevola.

Henry Reimer received the gold medal in the Bushwick Evening Training School. The silver medal for pattern drafting was awarded to J. J. Franbush. Others worthy of honorable mention are: William Kettler, Castanzio Fiorenze, Meyer Kaufman, Frank Doud, and Julius Moerleius.

PREPARES TO CELEBRATE CENTENNIAL OF THE INVENTION OF A TIN FOLDING MACHINE.

The one hundredth anniversary of the patenting of a tin folding machine will be the occasion for one of the largest and most elaborate industrial and community celebrations which New England has ever known. In 1819 "Peck's patent" laid the foundation for the steady and substantial development of what is now the Peck, Stow and Wilcox Company, of Southington, Connecticut. This date, therefore, is recognized by the firm and the industry generally as marking the real beginning of the manufacturing organization then headed by Seth Peck.

And so, on August 29 and 30 of this year, the Peck, Stow and Wilcox Company are staging in Southington what started out to be an industrial celebration, but has developed into a general "old home" occasion for the town's former residents, and more particularly than anything else a formal and official "Welcome home" for the returned soldiers of the town.

The concern is making it an especially appropriate occasion for this soldiers' welcome by presenting to the town, to be unveiled on that day, a memorial in stone and bronze, to serve as the base of a tall flag pole and flag. On the bronze tablets on the four sides of the memorial will be the names of all the men and boys who went from Southington, not only to this last and greatest war, but to all of the other wars in which America has borne a part.

Gov. Marcus H. Holcomb, of Connecticut, who is a member of the company, is serving on the executive committee for the celebration, and Secretary of War Baker is to be a guest of honor. A historical pageant, depicting the patriotic and industrial development of Southington and Connecticut, will be given following the presentation of the memorial. A big community picnic, a military parade, industrial exhibition, and a Peck, Stow and Wilcox banquet will be other features of the two days.

PLANS TO ENLARGE PREMISES.

In order to meet the requirements of an expanding business, the Cicero-Chicago Corrugating Company, 1542-44-46 Fifty-first Court, Cicero, Illinois, a suburb of Chicago, is planning to enlarge its premises. When the plans shall have been completed, the Company will have a plant 100 x 125 feet. W. F. Waller, who was formerly connected with the City Department of Hibbard, Spencer, Bartlett and Company, Chicago, is vice-president of the new Company at Cicero. He is firmly of the conviction that the Cicero-Chicago Corrugating Company will rapidly win its way to a place in the front rank of the trade.

IS APPOINTED WORKS MANAGER.

Announcement is made by the Berger Manufacturing Company, Canton, Ohio, of J. W. Wilson to be Works Manager for the company. He was formerly associated with the La Belle Iron Works, the Gary, Indiana, plant of the United States Steel Corporation, and the American Rolling Mill Company.

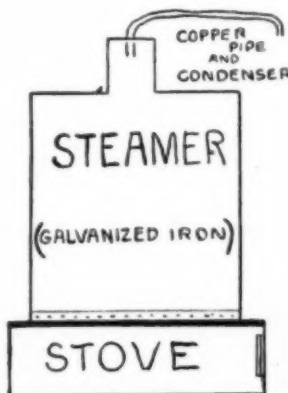
WANTS ADVICE ABOUT WATER STILL.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

As an old subscriber of your paper, I am taking the liberty to ask for information regarding the proper materials to be used in the construction of a water still. Not being very well versed in the chemistry of the matter, I should like to know if steam can be run through copper material and remain pure. I am enclosing a sketch of my plan and should appreciate any suggestions relative to the kind of metal to be used and the plan of operation.

Yours truly,

R. G. MANN.



Clarion, Iowa, June 16, 1919.

SHEET METAL COMPANY'S EMPLOYEES ENJOY ANNUAL OUTING.

The annual outing of the employes of the Milwaukee Corrugating Company of Milwaukee, Wisconsin, was held recently at Lake Tichigan at Tichigan, Wisconsin, thirty miles from Milwaukee. The distance thither was negotiated in one of the Company's motor trucks. The accompanying photograph shows a crowd of happy workers grouped around this sturdy transport. The playerpiano shown in the picture was operated by one of the "boys" during the trip who succeeded in maintaining a fairly respectable tempo all the way out from Milwaukee in spite of the disconcerting bumps in the highways. Original verses to the tune of "Maryland" were sung enroute. One of the stanzas runs in this wise:

We seek the shadow of thy trees,
Tichigan, oh Tichigan,
Thy waves shall wash our dusty knees
Tichigan, oh Tichigan.
We love the ozone in thy breeze;
We love thy liver wurst and cheese;
Thy hard and soft drinks always please,
Tichigan, oh Tichigan.

After indulging in the various games incident to such an outing, the crowd motored back to Milwaukee strongly fortified against the Sahara-like dryness which threatens the fame of Milwaukee in one direction. Fortunately, however, the sheet metal products of Milwaukee bid fair to make that city much more famous than the amber fluid with which it has been so long associated in the popular mind.

BUREAU OF MINES ISSUES REPORT ON CONDITION OF LEAD INDUSTRY.

An increased consumption of lead for some purposes is reported and some large producers claim to be in a stronger statistical position, says the current report of the United States Bureau of Mines. In some cases stocks were diminished. These conditions were reflected in a rise in quotations.

The price at times during recent months has been sustained only by producers refusing to sell below actual cost. Present market prices leave little or no margin of profit over operating costs. Rising prices of silver are stimulating production of Western lead and unless consumption increases more rapidly further curtailment of production in the soft lead producing districts is inevitable. During the low prices, a considerable quantity of lead was purchased by speculators who took profits on the recent rise. Large consumers who have been out on the open market since November are reported to have made purchases during May. It is expected that others who have been consuming Government stocks will be buyers during next month.

Sales of white lead have increased considerably during April and May but barely bring the total up to the record for last year which was much below normal pre-war consumption while stocks approximate those of normal years. Men well informed in the industry



The above photograph shows Louis Kuehn at the left of the Milwaukee Corrugating Company's painted sign and George T. Thomas of the Canton Steel Company, Canton, Ohio, at the right.

predict an unusual movement of white lead during the remainder of the year in continuation of the activity of the past few weeks, but normally there is a falling rate of sales during the latter half of the year.

Bulletin 253 of the United States Bureau of Labor Statistics on "Women in the Lead Industry" is a valuable discussion of lead products with respect to the danger of poisoning workers, particularly women.

Labor shortage is reported in the Wisconsin and Coeur d'Alene districts. The mines of the Park City district in Utah were closed by a strike on May 7. The production of the Coeur d'Alene district during May is estimated at 7,440 tons of lead and 130 tons of zinc. All mines are short of men, there being work in the district for one thousand additional men.

On March 31 stocks in bonded warehouses of lead ore, base bullion, scrap, and pig lead were 87,858 short tons (lead content), as compared with 29,869 tons on the same date last year.

Lead ores entered for domestic consumption in April amounted to 4,302 tons, having a lead content of 1,366 short tons, as compared with 2,676 tons of ore during March, containing 756 tons of lead. The April importations comprised 1,214 tons from Canada, 1,093 tons from Mexico, and 1,995 tons from Chile, containing 661, 176 and 529 tons of metallic lead respectively.

Base bullion was imported to the amount of 3,839 tons, having a lead content of 234 tons, from Canada, 3,411 tons from Mexico and 119 tons from the Dutch East Indies.

Pig lead from domestic ore exported during April amounted to 533 tons, distributed among many countries, the largest lots going to England and Canada.

Pig lead from foreign ores exported during April amounted to 2,126 tons of which 1,064 tons went to England, 385 tons to Scotland, 354 tons to Canada, 168 tons to Netherlands, and 54 tons to Sweden.

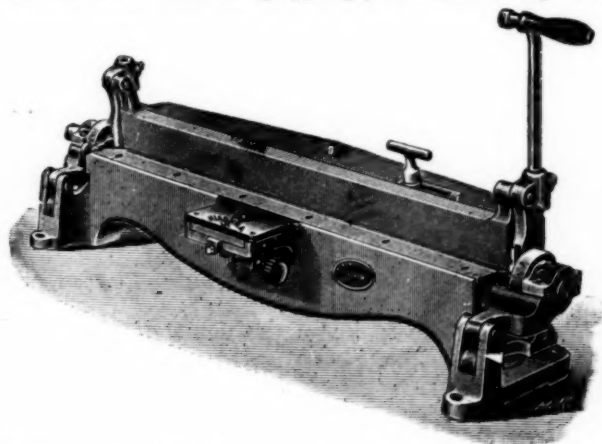
A delusion is our idea that our friends never gossip about us.

ROOFING BRACKET FITS ALL NEEDS.

Experience has demonstrated that roofing mechanics do better and quicker work when their minds are reasonably free from the fears incident to the hazard of their trade. From this point of view as well as from the angle of quick installation, comfort, and practical economy, the Ajax Roofing Bracket commends itself alike to contractor and employee. This device is made by the Ajax Bracket Manufacturing Company, Cleveland, Ohio. It was placed on the market in May, 1908, and since that time has gained wide favor among roofers in various parts of the country. As briefly cataloged by the manufacturers, its points of merit are: Strength, durability, and simplicity of construction; convenience and safety; adjustability to any pitch of roof; easy attached to and detached from the roof; and lightness of weight, compactness, and easy portability. The makers are so confident of its service that they guarantee to refund the purchase price if the buyers are not entirely satisfied with it. Those interested in a dependable roofing bracket will find it to their advantage to get into communication on the subject with the Ajax Bracket Manufacturing Company, 14420 Superior Road, Cleveland, Ohio.

HAS INTERCHANGEABLE PARTS.

The Niagara Adjustable Bar Folder, shown in the accompanying illustration, which is made by the Niagara Machine and Tool Works of Buffalo, New York, has an adjustable stop which is provided to limit the motion of the folding bar for any desired angle, also square and bevel stops. The pivots of the wing on the folding bar can be adjusted for rounded edges. When so adjusted, the top surface of the wing remains flush with the gripping jaw until the operator



Niagara Adjustable Bar Folder, Made by the Niagara Machine and Tool Works, Buffalo, New York.

begins to swing the folding bar. This is of advantage when placing the work in position. There is a gage which regulates the width of the fold and it is adjusted by turning the knob on the side of the extension. The width to which the gage is adjusted is indicated on a scale in fractions of inches, to avoid measuring or trying. Interchangeable parts are used for the Niagara Adjustable Bar Folder. It is suitable for as heavy work as other machines of this type. It bends the edges of light sheet metal at various angles to form locks, square joints, etc., and forms rounded edges ready for inserting a wire. The edge of the material

is clamped while the bending takes place and a fold of uniform width the entire length is obtained. For further particulars about this folder, and the many other products manufactured by the Company, dealers should address the Niagara Machine and Tool Works, Buffalo, New York, asking for catalog 56 S A.

EXPLAINS PROCESS OF GALVANIZING.

In the brochure published by the Inland Steel Company of Chicago, entitled, "The Story of an Inland Galvanized Sheet," there is much valuable information. The Company has absolute control of every step from the ore to the finished product. Inland sheets are workable as they contain the toughest and most ductile steel—basic open hearth steel—of the highest type. The galvanizing process gives the sheets great power to resist the attacks of moisture, acid, fumes, and like foes of iron and steel. The Company has excellently equipped chemical and physical laboratories in which all ores are analyzed and ores of varying properties are combined in each blast so as to produce the best iron.

Test pieces of the iron of each melt are analyzed chemically and tested on special machines for tensile strength, elastic limit, etc. In the steel-making process, all the limestone, carbon, manganese and iron oxide added to the melt are determined by careful analysis and during the melt, test specimens are dipped out, cooked, and analyzed. Then such ingredients are added as will be necessary to eliminate impurities or bring the steel to the exact analysis desired. The Inland Steel Company, First National Bank Building, Chicago, Illinois, will be pleased to furnish further information to those desiring it.

GIVES STATUS OF COPPER INDUSTRY.

Surplus copper stocks in the United States amount to 1,200,000,000 to 1,500,000,000 pounds, as compared to a normal surplus of 600,000,000 pounds, according to the latest summary of the United States Bureau of Mines. England is reported to have 114,531,000 pounds and France and Italy together had, at the date the armistice was signed, 300,000,000 to 400,000,000 pounds which was the apparent cause for the restrictions on imports of copper into France and Italy. This surplus has undoubtedly decreased considerably as France has recently lifted the embargo on copper imports. This would indicate that Europe will soon be in the market for copper, thus greatly helping the American industry. The United States Government is reported to have stocks of copper amounting to 140,000,000 pounds. From this stock 5,000,000 pounds was recently sold at the market price although this copper was bought at 26 cents.

Copper prices appear to be firm at 16 to 16¾ cents. This price will enable most producers to operate, although in many cases below the actual cost of production, where all allowable charges are considered. Recent sales were reported as high as 17 cents but it does not appear likely that this price will hold, although some observers predict 20 cent copper in the near future.

The United States is producing about 100,000,000 to

120,000,000 pounds of copper a month, as compared with about 150,000,000 pounds in 1917 and 1918. Practically all copper mines are producing at only 60 to 80 per cent of the rate of last November, one noteworthy exception being the Mohawk, which has increased its production about 20 per cent. Although the majority of mines show a reduced output several large companies show an increase in April over March, the principal ones being Utah, Inspiration, and Nevada Consolidated.

The production at present is about the same as before the war. However, the consumption is low and about 100 per cent more copper is produced than is being consumed. The domestic consumption and the exports must be doubled before normal consumption is reached.

GUARANTEES VARIOUS GRADES.

The Dearborn Steel and Iron Company, 122 South Michigan Avenue, Chicago, Illinois, states that its objective is to give the best value and service for the money. Its graded sheets are fully guaranteed to answer all requirements when primes are not essential. Its primes are ultra primes. All sheet metal contractors are anxious to secure materials of different grades to meet the requirements of the various conditions. For just such purposes, the Dearborn Steel and Iron Company has many different grades of material which are all guaranteed. Special effort is always made by the Company to fill orders promptly and efficiently. By addressing the Dearborn Steel and Iron Company, 122 South Michigan Avenue, Chicago, Illinois, those interested may obtain stock and price lists.

SOLICITS PLANS FOR A TIN SHOP.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

Our store building, warehouse, and stock were destroyed by fire, June 8, 1919. We intend to rebuild at the very earliest opportunity. Among your numerous readers there are many, no doubt, who would be kind enough to offer us suggestions which would enable us to design a better structure than the one which was burned down. We should be glad to receive a plan for a store building and tin shop.

ELSKAMP AND WIEDMANN.

Potosi, Wisconsin, June 17, 1919.

ADVOCATES ARTISTIC SHEET METAL.

Industry in America has progressed to a stage in which purely utilitarian motives are not a sufficient warrant for the use of any building material. Manufacturers and other business men have learned that decorative efforts have a distinct value in the promotion of efficiency. The influence of environment is not exclusively physical. The mind also comes within its range. Better workmanship has been proved to result in surroundings which have a continuously artistic appeal. Today, therefore, it is not an uncommon experience to see factories with ornate exteriors—in numerous instances, with well-kept lawns and pleasant flowers. The enterprising sheet metal contractor, by taking advantage of this new tendency toward beautifying of industry, can readily enlarge

his business by advocating the use of artistic sheet metal products for interior and exterior purposes. He can obtain many ideas for the development of this branch of his trade by getting into communication with the Gerock Brothers Manufacturing Company, 1227 Vanderventer Avenue, St. Louis, Missouri.

ADVERTISEMENT GETS QUICK RESULTS.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

Please discontinue my advertisement in the classified column. The machine and stakes advertised have been sold. The first appearance of the advertisement found the buyers, one in Lyons, Iowa, and the other in Topeka, Indiana.

L. A. PADDOCK.

Chicago, Illinois, June 16, 1919.

NOTES AND QUERIES.

Gainaday Washing Machine.

From Edward Schuler, Pearl City, Illinois.

Can you give me the address of the manufacturer of the Gainaday Washing Machine?

Ans.—This is made by the Pittsburgh Gauge and Supply Company, 30th and Liberty Avenue, Pittsburgh, Pennsylvania.

Dicks Aluminum Solder.

From The Drury and Kelley Hardware Company, Cadillac, Michigan.

Please let us know who makes Dicks Aluminum Solder.

Ans.—E. M. Dicks, 241 West Center Street, Marion, Ohio, manufactures this aluminum solder.

Core Making Machine.

From the Peru Sheet Metal Shop, Peru, Illinois.

We would like to know where we can get a core making machine to manufacture honeycomb cores for automobile radiators.

Ans.—International Molding Machine Company, 2614 West 16th Street, Chicago; and Wadsworth Core Machine and Equipment Company, Akron, Ohio.

Hardware Cloth.

From the Widhelm Remedy and Manufacturing Company, Fremont, Nebraska.

Kindly tell us who handles hardware cloth.

Ans.—You can secure this from Bullard and Gormley Company, 175 North State Street, Chicago, Illinois.

Hardware and Plumbing Houses.

From Widhelm Remedy and Manufacturing Company, Fremont, Nebraska.

We would like to know the name of a wholesale hardware and plumbing house in Kansas City, Missouri.

Ans.—Bunting-Stone Hardware Company; Richards and Conover Hardware Company, and Townley Metal and Hardware Company all are wholesale hardware houses and the first named is also a plumbing house.

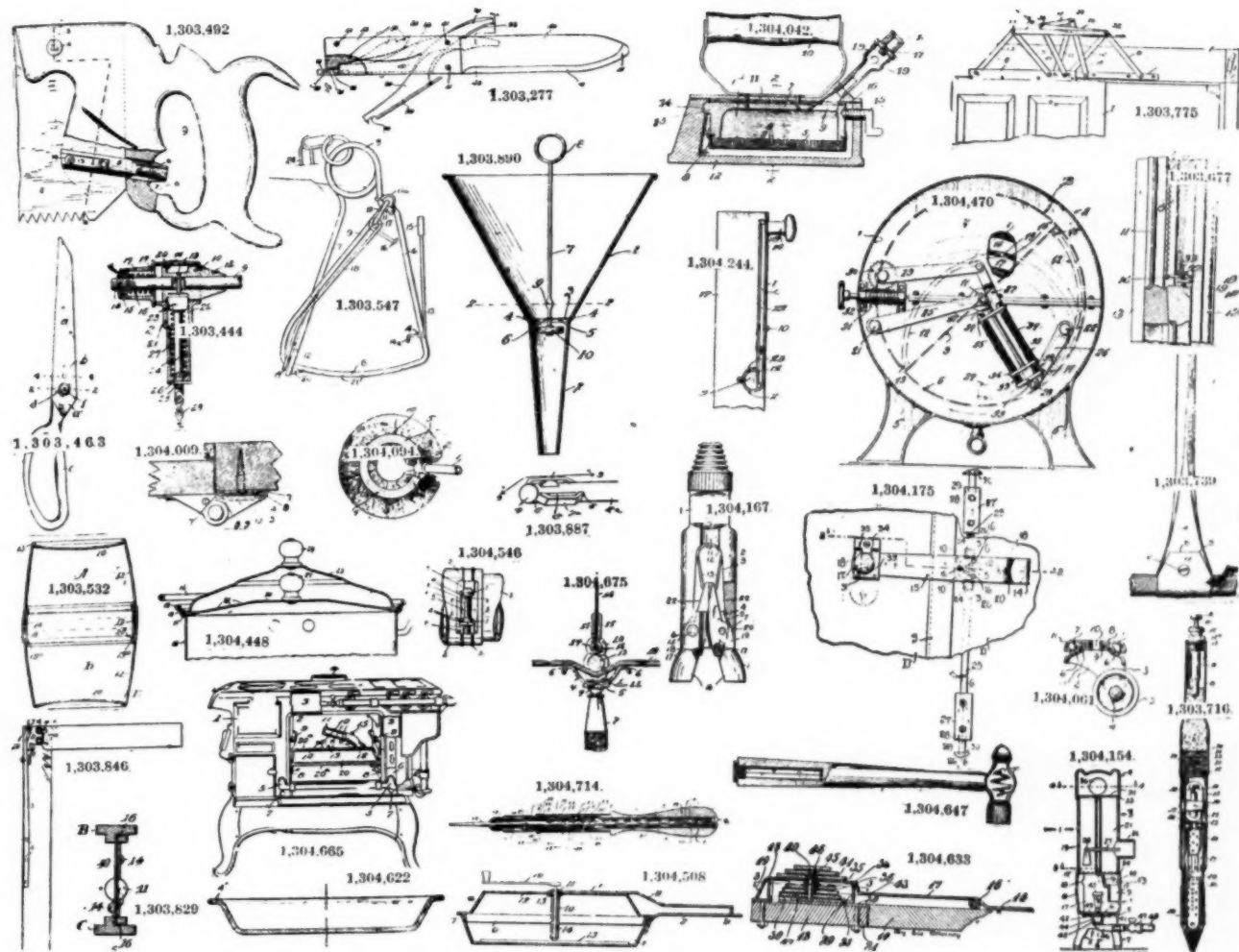
Oil Stove.

From B. H. S. Hardware, Dysart, Iowa.

We would like to know where we can get an enameled oil stove—with an enameled top or a granite top.

Ans.—George M. Clark and Company, Division American Stove Company, 179 North Michigan Avenue, Chicago, Illinois; Dangler Stove Company, Division American Stove Company, Cleveland, Ohio; Detroit Vapor Stove Company, Detroit, Michigan; and Ringen Stove Company, Division American Stove Company, 825 Chouteau Avenue, St. Louis, Missouri.

NEW PATENTS.



1,303,277. Combined Knife and Wire Cutter. John Federkiewicz, Yardley, Pa., and Marcin Olszak, Trenton, N. J. Filed May 10, 1918.

1,303,444. Door-Stop. William H. Wood, Cleveland, Ohio, assignor, by mesne assignments, to The Astrup Company, Cleveland, Ohio. Filed Oct. 15, 1915.

1,303,463. Lubricating Device for Shears. Thomas S. Crane, East Orange, N. J., assignor, by mesne assignments, to Bishop White, West Hartford, Conn., and Eduard F. von Wettberg, Fairfield, Conn. Filed March 19, 1918.

1,303,492. Saw-Handle Fasteners. George E. Miller, Stege, Calif. Filed Aug. 16, 1915.

1,303,532. Metallic Barrel. Henry W. Avery, Cleveland, Ohio. Filed Nov. 27, 1914.

1,303,547. Animal-Trap. Thomas J. Ellison, Terrill, Ky. Filed Feb. 17, 1919.

1,303,697. Sash-Lock. John A. Jones, Mansfield, Ohio. Filed Aug. 25, 1916.

1,303,716. Soldering-Iron. Raymond C. Parent, Crawfordsville, Ind. Filed Dec. 27, 1918.

1,303,739. Lightning-Rod. John S. Swenson, Cresco, Iowa, and Frank E. Stehlik, Oak Park, Ill. Filed Jan. 4, 1917.

1,303,775. Door-Hanger. Julian E. Corbin, Alameda, Calif. Filed June 6, 1918.

1,303,829. Stock for Spirit-Levels. Gustave A. Vogel, New Britain, Conn. Filed Aug. 11, 1917.

1,303,846. Square. Augustus Blauvelt, Paterson, N. J. Filed Oct. 30, 1917.

1,303,887. Small-Arm. James Del Greco, New Haven, Conn. Filed Feb. 11, 1919.

1,303,890. Funnel. Floyd H. Gustafson, Mead, Nebr. Filed July 30, 1917.

1,304,009. Detachable Spring-Hinge. George N. Barcus, Wabash, Ind. Filed Oct. 6, 1916.

1,304,042. Apparatus for Burning Gas. Charles Knox Harding, Chicago, Ill. Filed Dec. 21, 1914.

1,304,061. Caster. Josiah Albert Jones, Elmwood, Conn. Filed Aug. 20, 1917.

1,304,094. Mop. Charles O. Quimby, Wakefield, Mass. Filed Feb. 19, 1914.

1,304,154. Gas-Radiator. William H. Cain, Los Angeles, Calif. Filed April 1, 1918.

1,304,167. Underreamer. Charles L. Dunham, Pennsboro, W. Va. Filed Sept. 12, 1918.

1,304,175. Door-Lock. Samuel P. Gehret, York, Pa. Filed June 24, 1918.

1,304,244. Latch. William H. Appleby, Chicago, Ill. Filed May 4, 1918.

1,304,448. Cooking Utensil. William E. Browning, Wells-ville, N. Y. Filed Jan. 26, 1918.

1,304,470. Washing-Machine. William G. Gibbins, St. Louis, Mo.; Henry Gibbins executor of said William G. Gibbins, deceased. Filed Oct. 4, 1916.

1,304,508. Cooking-Utensil. Samuel H. Petro, Los Angeles, Calif. Filed June 2, 1916.

1,304,546. Hose-Clamp. Frank P. D'Arcy, Kalamazoo, Mich. Filed Feb. 7, 1919.

1,304,622. Heating Vessel. Eugene C. Sullivan and William C. Taylor, Corning, N. Y., assignors to Corning Glass Works, Corning, N. Y. Filed June 24, 1915.

1,304,633. Combination-Lock. Emil Volk, Gemmell, Minn. Filed Jan. 3, 1917.

1,304,647. Hammer. Mile Basta, Gary, Ind. Filed March 27, 1917.

1,304,665. Damper for Combination Coal and Gas Ranges. Henry C. Dietrich, Evansville, Ind., assignor to Crescent Stove Works, Evansville, Ind. Filed May 21, 1918.

1,304,675. Razor-Stropping Device. Franz A. Fuller, Newark, N. J., assignor to American Safety Razor Company, Brooklyn, N. Y. Filed May 28, 1918.

1,304,714. Tool-Driver. Laroy S. Starrett, Athol, Mass., assignor to The L. S. Starrett Company, a Corporation of Massachusetts. Filed Dec. 16, 1914.

WEEKLY REPORT OF TRADE AND THE MARKETS

PRODUCTION OF STEEL MILLS GAINS FIFTEEN PER CENT INCREASE.

As compared with their output of a month ago, steel mills have increased their production fully fifteen per cent. This is all the more remarkable because the steel trade has been one of the slowest in getting back to a peace time occupation, due largely to unsettled conditions and unfavorable prices. One of the most favorable factors bearing on the steel trade is the general revival of activity in the building trade.

For four years and more, contractors have been handicapped in their efforts to obtain supplies, especially of steel; they have suffered serious losses of skilled labor through the entrance of the United States into the world war and have met with hesitation on the part of prospective builders who delayed new construction because of the generally unsettled condition of affairs. Now this position is reversed all around.

The steel plants are getting back all of the trained officials they gave to the service, they are getting back the plants which had been devoted to Government and foreign war business, their skilled and unskilled workmen are returning, and they are ready to cooperate in full with the building trades in the readjustment to normal conditions. The country finds itself confronted with a four-year gap in its construction movements—a gap which must be bridged—and the bridging means an extraordinary demand for every form of steel, from nails to beams.

The situation in the automobile trade is also favorable, but is more normal. Motor car construction has been proceeding with immense strides, cars, airplanes, airplane engines, gasoline engines for small power boats, tractors—myriad avenues of usefulness have been open to the automobile builders, who put private business behind and gave the service the best they had. Now, with the large demand which has accumulated for private interests, the motor trade needs must strain every facility to catch up with its own affairs, and at the present time buying of steel for the motor industry is very good.

STEEL.

The general attitude among buyers for some time has seemed to be sort of a half-expectation of price concessions but the fallacy of this hope has been seen and buyers now seem convinced that no change can be expected in the price schedule of March 21, and there is very little shading from the standard basis at present.

Of course, from time to time, certain concessions are made as a matter of sales policy between individual concerns, or as an accommodation to large buyers, but price shading even of this sort, is the exception rather

than the rule and on the whole the accepted price schedule is adhered to firmly.

Buying for railroad account is still far below normal, in fact the railroad administration has not nearly covered requirements and it seems a foregone conclusion that soon or late this demand must materialize—and the trade rather expects that it will be soon.

The demand for export is steady, but rumors spread broadcast the past week of large orders for French reconstruction work seem to have been without foundation. It was pointed out by leaders in the companies which were supposed to have booked the business that France is not only capable of handling her own steel problems, but can do it cheaper at home than in foreign markets. In addition to this fact, an outlet is found for the labor which is rendered temporarily idle by the destruction of industry in the regions where reconstruction is necessary. However, it was stated that there is a possibility of France coming here for iron ore.

COPPER.

The tone of the copper market for future deliveries is exceptionally strong. One notable feature of the situation is the eagerness of big consumers to buy for shipment over the last three or four months of the year at slight premiums over prices current for August shipment and the reserve maintained by large producing interests on such positions who evidently anticipate the ability to make sales later on increased prices for shipment over the last quarter of the year. Another feature showing the strength of the market is the fact that dealers continue to be buyers rather than sellers for August and later shipments.

It is an interesting fact that while prices have advanced 3 cents to 3¼ cents per pound from the low points touched this year, the tendency of prices is still upward for late positions. Although domestic consumers have apparently largely covered their requirements for July and even a large percentage of needs for August, they are still manifesting considerable interest in later positions, in anticipation of a further revival in domestic business during the fall months, and the optimistic reports that are being circulated in regard to the foreign situation.

One of the most interesting developments is the attitude of the French Commissioner of Engineers now in this country, who, it is reported, will immediately recommend to the French Government the electrification of the French standard railroads. The relative scarcity of coal and the long time required to restore the coal mines flooded by the Germans, to maximum capacity, makes the electrification of railroads from power plants feasible in the French Republic. Should this work be carried out, it is estimated that 375,000

tons, equivalent to 840,000,000 pounds of copper, will be required.

There is no abatement in the firm undertone displayed lately in the copper market and metal below 25½ cents is out of the question. Producers and sellers holding spot and nearby firm at the current prices. The speculative position of copper, according to the bid and asking prices at the New York Metal Exchange, is very strong and especially the late deliveries are still pointing higher.

TIN.

Some revival of interest in future shipments is the only noticeable feature in the market for tin, which otherwise under the still prevailing restrictions is moving in a routine way. Consumers in need of spot tin have to take the metal from the Government holdings at the fixed price of 72½ cents. Shipments of Straits tin, subject to license, are quoted at 52 cents, and the advancing tendency in the London market seems to indicate that some import orders are presently to be placed there.

All restrictions on sale of pig tin in the United States will be removed when the remaining 577 tons held by the Government are sold. At the rate that these sales have been made lately, free trading ought to be possible in the next week or ten days, and consumers having surplus lots of spot tin will then be able to sell same at the heavy premium over cost of replacing their sales for import.

Licenses must be applied for and granted to importers before tin can be imported into the United States. Tin shipped from points of origin on or after June 30th will be allowed entry into the United States August 1st.

No provision is made in the War Industries Board's ruling of June 16th for Straits, Australian, Chinese and Banca tin shipped before June 30th from point of origin, and now en route to England, Canada, etc., or awaiting shipment there to the United States. Therefore, it would seem Straits, Australian, Banca and Chinese shipped from point of origin prior to June 30th until some new regulation is made, are to be denied entry into the United States, but as England is the point of origin for English Lamb & Flag and English Refined these will be allowed entry into the United States August 1st.

LEAD.

The market for lead is unchanged at 5.65 cents for American pig and 6.15 cents for bar lead. There is a fair amount of buying. Consumers report an increased business in nearly all lines.

SOLDER.

No changes have occurred in the solder market, prevailing prices in Chicago being as follows: War-ranted, 50-50, per pound, 40.5 cents; Commercial, 45-55, per pound, 37.2 cents; Plumbers', per pound, 33.9 cents.

ZINC.

Reports from Chicago are to the effect that zinc

is steady at 7.25 cents in slabs. The demand from domestic sources shows no improvement. The galvanizing trade is apparently content with carrying a fair amount of stock on hand to provide for a possible sharp turn of good demand for sheets, and further than that does not seem interested in the market.

SHEETS.

Both in tonnage and distribution of orders, there has been an improvement in the demand for sheets. While figures have not yet been compiled it is safe to estimate that in the first half of the month the independents operated at more than 60 per cent of capacity, probably nearer 65 per cent, while the leading interest did 65 per cent or better. For the second half of the month operations will probably average 70 per cent or more. The leading interest is likely to be doing 75 per cent next week and is doing fully 70 per cent this week. On the basis of last week's production rate the leading interest is sold up for four or five weeks and as it is prompt deliveries that are in demand now it is desirable to speed up operations so as to expedite deliveries.

TIN PLATE.

Domestic demand for tin plate has increased somewhat in the past week or ten days, but is still of extremely moderate proportions, and full operation of the mills at any time during the remainder of the year seems to be out of the question. Operations have increased slightly of late, however, and now average somewhat about 50 per cent. The leading interest has just gotten its operation above 50 per cent, while the independents are averaging perhaps between 55 and 60 per cent. The leading interest will operate better in July than was expected, since, in line with its recent practice of closing mills for short periods, in order to distribute work among the men, it had intended to close two plants July 1st, and it has just been decided to keep those plants in operation for a time after July 1st.

OLD METALS.

Wholesale quotations in the Chicago district which may be considered nominal, are as follows: Old steel axles, \$23.00 to \$24.00; old iron axles, \$27.00 to \$28.00; steel springs, \$16.00 to \$17.50; No. 1 wrought iron, \$16.50 to \$17.00; No. 1 cast, \$20.50 to \$21.00, all net tons. Prices for non-ferrous metals are as follows, per pound: Light copper, 12 cents; light brass, 7½ cents; lead, 4 cents; zinc, 4½ cents; cast aluminum, 20 cents.

PIG IRON.

The past week has witnessed the most expansive market for pig iron shown since the close of the war. Conservative estimates place the bookings of the last two weeks at well over 500,000 tons. Since this has been made up almost entirely of foundry and malleable grades, the wide distribution of the buying is emphasized. Some unusually large lots have been booked through negotiations quietly conducted with leading consumers in the foundry industry.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS.		LEAD.		Broad.		BEATERS.	
PIG IRON.		American Pig.....\$5 65		Plumbs, West, Pat.....List		Carpet.	
		Bar.....6 15		" Can. Pat.....\$69 00		No. 7 Tinned Spring Wire...\$1 10	
		Sheet.		" Firemen's (handled),		No. 8 Spring Wire coppered...1 50	
		Full coils.....per 100 lbs. \$8 25		".....per doz. 21 00		No. 9 Preston.....1 75	
		Cut coils.....per 100 lbs. 8 50		Single Bitted (without handles).		Egg.	
		TIN.		Warren Silver Steel.. on application		No. 50 Imp. Doyer.....\$1 10	
		Pig tin.....76 1c		Warren Blue Finished.		No. 102 " " tinned...1 35	
		Bart tin.....78 1c		Matchless Red Pole.....\$11 50		No. 150 " " hotel...2 10	
		FIRST QUALITY BRIGHT		Prices		No. 10 Heavy hotel tinned..2 10	
		TIN PLATES.		Double Bitted (without handles).		No. 13 " " " "3 30	
		Per box		Warren's Natl. Blue, 3 1/2 to 4 1/2		No. 15 " " " "3 60	
		IC 14x20.....112 sheets \$13 20		lb.....Prices on application		No. 18 " " " "4 50	
		IX 14x20.....14 63		The above prices on axes of 3 to 4 lbs.		Hand.	
		IXX 14x20.....16 30		are the base prices.		8 9 10 12	
		IXXX 14x20.....17 50		BAGS, PAPER NAIL.		Per doz.\$11 50 13 00 14 75 18 00	
		IXXXX 14x20.....18 70		Pounds.....10 16 20 25		Moulders'.	
		IC 20x28.....26 40		Per 1,000...\$5 00 6 50 7 50 9 00		12-inch.....Per doz. 20 00	
		IX 20x28.....29 25		BALANCES, SPRING.		BELLS.	
		IXX 20x28.....32 60		Pelouze.....20%		Call.	
		IXXX 20x28.....35 00		BARS, CROW.		3-inch Nickeled Rotary Bell,	
		IXXXX 20x28.....37 40		Pinch or Wedge Point, per cwt...\$8 50		Bronzed base.....per doz. \$5 50	
		COKE PLATES.		BASKETS.		Cow.	
		Cokes, 180 lbs.....20x28 \$16 00		Clothes.		Kentucky.....30%	
		Cokes, 200 lbs.....20x28 16 20		Small Willow.....per doz. 15 00		Door.	
		Cokes, 214 lbs.....IC 20x28 16 60		Medium Willow.....17 00		New Departure Automatic...\$ 7 50	
		Cokes, 270 lbs.....IX 20x28 18 50		Large Willow.....20 00		Rotary.	
		BLUE ANNEALED SHEETS.		Galvanized Steel. 1/2 bu. 1 bu. 1 1/2 bu.		3-in. Old Copper Bell.....6 00	
		No. 10.....per 100 lbs. \$4 57		Per doz.....\$11 50 \$17 00 \$22 00		3-in. Old Copper Bell, fancy. 8 00	
		No. 12.....per 100 lbs. 4 62		AUGERS		3-in. Nickeled Steel Bell....6 00	
		No. 14.....per 100 lbs. 4 67		Boring Machine.....60%		3 1/2-in. Nickeled Steel Bell...6 50	
		No. 16.....per 100 lbs. 4 77		Irwin's.....25%		Hand.	
		ONE PASS COLD ROLLED BLACK.		Carpenter's Nut.....50%		Hand Bells, polished.....15%	
		No. 18-20.....per 100 lbs. \$5 17		Hollow.		White Metal.....15%	
		No. 22-24.....per 100 lbs. 5 22		Bonney's.....per doz. 30 00		Nickel Plated.....10%	
		No. 26.....per 100 lbs. 5 27		Stearns, No. 0.....43 25		Swiss.....15%	
		No. 27.....per 100 lbs. 5 32		No. 1.....43 25		Silver Chime.....10%	
		No. 28.....per 100 lbs. 5 37		No. 2.....43 25		Miscellaneous.	
		No. 29.....per 100 lbs. 5 42		No. 3.....42 00		Church and School, steel alloys...30%	
		GALVANIZED.		No. 4.....9 00		Farm, lbs...40 50 75 100	
		No. 16.....per 100 lbs. \$5 97		No. 5.....45 00		Each.....\$3 00 3 75 5 50 7 25	
		No. 18-20.....per 100 lbs. 6 12		No. 6.....45 00		BEVELS, TEE.	
		No. 22-24.....per 100 lbs. 6 7		No. 7.....45 00		Stanley's rosewood handle, new	
		No. 26.....per 100 lbs. 6 42		No. 8.....45 00		list.....Nets	
		No. 27.....per 100 lbs. 6 57		No. 9.....45 00		Stanley's iron handle.....Nets	
		No. 28.....per 100 lbs. 6 72		No. 10.....45 00		BINDING CLOTH.	
		No. 30.....per 100 lbs. 7 22		No. 11.....45 00		Zincd.....55%	
		POLISHED SHEET STEEL.		No. 12.....45 00		Brass.....40%	
		No. 24.....per 100 lbs. \$7 30		No. 13.....45 00		Brass, plated.....60%	
		No. 26.....per 100 lbs. 7 35		No. 14.....45 00		BITS.	
		No. 27.....per 100 lbs. 7 40		No. 15.....45 00		Auger.	
		No. 28.....per 100 lbs. 7 50		No. 16.....45 00		Jennings Pattern.....20%	
		SMOOTH SHEET STEEL.		No. 17.....45 00		Ford Car.....List plus 5%	
		Per 100 lbs.		No. 18.....45 00		Ford's Ship.....List plus 5%	
		Wood's Smooth No. 20.....\$6 57		No. 19.....45 00		Irwin.....35%	
		" " No. 22-24.....6 62		No. 20.....45 00		Russell Jennings.....15%	
		" " No. 25-26.....6 67		No. 21.....45 00		Clark's Expansive.....33 1/2%	
		" " No. 27.....6 72		No. 22.....45 00		Steer's " Small list, \$22 00.....3%	
		" " No. 28.....6 87		No. 23.....45 00		" " Large " \$26 00.....3%	
		PATENT PLANISHED SHEET		No. 24.....45 00		Irwin Car.....35%	
		IRON.		No. 25.....45 00		Ford's Ship Auger pattern	
		Patent Planished Sheet Iron,		No. 26.....45 00		Car.....List plus 5%	
		100 lbs., base No. 28.....\$11 55		No. 27.....45 00		Center.....10%	
		BAR SOLDER.		No. 28.....45 00		Countersink.	
		Warranted, 50-50.....per lb. 40.50		No. 29.....45 00		No. 18 Wheeler's.....per doz. \$2 25	
		Commercial, 45-55....." 37.20		No. 30.....45 00		No. 20 ".....3 00	
		Plumbers'....." 33.90		No. 31.....45 00		American Snailhead.. " 1 75	
		SPELTER.		No. 32.....45 00		" Rose " " 2 00	
		In slabs.....7 1c		No. 33.....45 00		" Flat " " 1 40	
		SHEET ZINC.		No. 34.....45 00		Mahew's Flat....." 1 60	
		Cast lots.....12c		No. 35.....45 00		" Snail....." 1 90	
		Less than cast lots.....12 1/2 to 12 1/2c		No. 36.....45 00		Dowel.	
		COPPER.		No. 37.....45 00		Russell Jennings.....15%	
		Copper Sheet, base.....25 1/2		No. 38.....45 00		Gimlet.	
		ANVILS.		No. 39.....45 00		Standard Double Cut.	
		Trenton, 70 to 80 lbs.....9 1/2c per lb.		No. 40.....45 00		Doz. \$1 10—\$1 60	
		Trenton, 81 to 150 lbs.....9 1/2c per lb.		No. 41.....45 00		Countersink.....Doz. 1 80	
		ASBESTOS.		No. 42.....45 00		Reamer.	
		Board and Paper, up to 1/16" 17c per lb.		No. 43.....45 00		Standard Square.....Doz. 2 50	
		Thicker.....18c per lb.		No. 44.....45 00		American Octagon... " 2 50	
		AXES.		No. 45.....45 00		Screw Driver.	
		Boys' Handled.		No. 46.....45 00		No. 1 Common....." 1 40	
		Niagara.....12 50		No. 47.....45 00		No. 26 Stanley....." 1 75	

CRAYONS—See Chalk.

CROWBARS.

Pinch or Wedge Point.....per lb. 8c

CUTTERS

Glass.

Woodward.....40%

Meat.

Enterprise—Nos. 5 16 12
Each \$2 50 \$4 25 \$3 75
" Nos. 22 32
" 6 50 8 50

Pipe.

Saunders', No. 1 2 3
Each.....\$1 85 2 75 6 75

Saw and Kraut.

4-knife Kraut.....\$20 00-55 00
3-knife Kraut, 8x27 in. 13 00-18 00
1-knife Saw.....2 50
2-knife Saw.....3 00
Washer.....11 00

DAMPERS, STOVE PIPE.

Ideal

3".....\$1 00
4".....1 05
5".....1 15
6".....1 25
7".....2 20
8".....3 75
10".....6 00

DIES AND STOCKS.

Discount.....New List

DIGGERS.

Post Hole.

Eureka.....per doz. \$14 50
Iwan's Split Handle (Eureka)
4-ft. Handle.....14 00
7-ft.....20 00
Iwan's Perfection (Atlas) " 16 00
Iwan's Hercules pattern " 16 15
See also Augers—Post Hole.
Dividers, Wing.....25%

DOOR CHECKS—See Checks.

DOORS, SCREEN.

1-in. 4-panel, painted.....Net Price
1 1/2-in. 4-panel, painted.....
1 1/2-in. 3-panel, natural pine,
fancy....."

DOOR HANGERS—See Hangers.

DRILLS.

Blacksmiths' Twist. (New List).....40%

Breast.

Millers Falls No. 12.....Each, \$46 00
" " 112.....26 00

Hand.

Goodell's Automatic.
Nos. 01 03
Per doz. 12 00 14 40
Goodell's Single Gear, per doz. 15 75
Goodell-Pratt No. 4 per doz.
list, less.....35-40%
Goodell-Pratt No. 379 per doz.
list, less.....35-40%
Reciprocating.
Goodell's.....per doz. 26 00

DRIVERS, SCREW.

Standard.....Nets
Lock Ferrule....."
Champion....."
Champion Pattern....."
Clark's Interchangeable....."
Edison....."
Reed's Lightning....."
Goodell's Spiral....."
Yankee Ratchet....."
" Spiral....."

EAVES, TROUGH.

60% off Standard List.

ELBOWS—Stove Pipe.

1-piece Corrugated, Uniform.

Doz.
5-inch.....\$1 40
6-inch.....1 50
7-inch.....1 50

Uniform, Color Adjustable

Doz.
5-inch.....\$1 35
6-inch.....1 45
7-inch.....1 80

ELBOWS—Conductor Pipe.

Galvanized Steel, Tin and Terne,
Round Corrugated.Size. Doz.
2-inch.....\$ 3 60
3-inch.....4 32
4-inch.....7 20
5-inch.....15 00
6-inch.....18 00
Subject to 60% discount.

EMERY, TURKISH.

Size. 5-lb. pkgs. 1/2 kegs. kegs.
Flour.....15c 8c 7 1/2c

EYES.

Bright Wire Screw—See Ooods, B. W.

Drifting Pick.....60, 10&5%

Hooks and Eyes—

Brass, 1 1/2" No. 60.....per gross, \$3 50
Iron " " 50.....1 60

FASTENERS, STORM SASH.

Shroeder's.....per doz. \$1 50
Sensible.....3 00

FILES AND RASPS.

Delta
Delta.....30%
Swiss.....List plus 25%
Utility.....net.

Nicholson's—

American.....50&2 1/2%
Arcade.....50&2 1/2%
Black Diamond.....40%
Eagle.....50&2 1/2%
Great Western.....50&2 1/2%
Kearney & Foot.....50&2 1/2%
McClellan.....50&2 1/2%
Nicholson.....40%
J. Barton Smith.....50&2 1/2%
X-F Swiss Pattern.....List plus 10%Simonds'.....50%
Disston's.....50&2 1/2%
Heller's.....60&10%

FORKS.

Barley.
Steel, new list.....New PricesHay.
2-tine.....New prices
3- ".....New prices
4- ".....New prices
Digging.....New prices
Scoop.....New prices

Header.

3-tine.....New prices
4- ".....New prices

Manure

4-tine.....New prices

FREEZERS—ICE CREAM.

White Mountain 1-quart.....@
" " 2 ".....@
" " 4 ".....@
" " 6 ".....@
Arctic.....1 ".....@
" " 2 ".....@
" " 4 ".....@
" " 6 ".....@
Prices on application

GAUGES.

Cream Pail.
Fairmount.....per doz. \$3 75
Marking, Mortise, etc.....
Wire.....Nets
Disston's.....25%

GIMLETS.

Discount.....35@40%

GLUE.

Bulk.
B Amber.....per lb. 35c
A White.....40c
H. S. Amber.....32c

Liquid.

Army & Navy.....40%
Le Page's—
List "A".....37 1/2%
List "B".....33 1/2%
List "C".....25 %

GREASE, AXLE.

Wood Boxes.
Frazer's.....per gro. \$13 00
Hub Lightning.....7 50

Wood Pails.

Frazer's, 15lb.\$1.00; 25 lb.\$1.50 each
Hub Lightning, 15 lb. 90c; 25 lb.
\$1.21 each.

Tin Cans.

Frazer's
1 1/2 lb. per doz.....\$1 75
3 lb. per doz.....3 25

GRINDSTONES.

Family.
Inches.. 7 8 10 12
Per doz..20 50 21 75 26 25 30 50

Loose.

Per ton.....Price on application

Mounted.

Ball Bearing.....1 2 3
Each.....\$4 75 5 00 5 25

GUN WADS.

(See Ammunition).

GUNS.

Iver Johnson Champion Single
Barrel Shot Guns.....Net Prices
Double Barrel, Hammerless....."

HAPTS, AWL.

Brad.

Common.....per doz. \$9 35

Peg.

Patent, plain top.....80

Patent, leather top.....90

Sewing.

Common.....24

Patent.....55

HAMMERS, HANDLED.

per doz., net
Blacksmiths, Hand, No. 0, 26 oz. \$11 11
Engineers', No. 1, 26 oz. 11 11
Farriers', No. 6, 7 oz. 7 23
Machinists', No. 1, 7 oz. 6 65

Nail.

Vanadium, No. 41 1/2, 16 oz.,
per doz.....\$12 00
V. & B., No. 11 1/2, 16 oz. per doz. 10 00
Garden City, No. 101 1/2, 16
oz., per doz. 9 00
Tinner's Riveting, No. 1, 8 oz.,
per doz. 8 00
Shoe, Steel, No. 1, 13 oz. per doz. 6 88

Tack.

Magnetic.
Per doz.....\$5 63

HAMMERS, HEAVY.

Heavy Hammers and Sledges.
Under 5 lbs.50%
5 lbs. and over.....50&10%
Masons'.
Single and Double Face.....50%

HANDLES.

Auger.
Common Assorted.....per doz. \$0 75
Pratt's Adjustable, Nos. 1 & 2,
per doz. 6 00
Ives' Adjustable.....per set, 1 35
Axe.....30%

Chisel.

Hickory, Tanged, Firmer, Assorted,
55c; Large, 85c per doz.
Hickory, Socket Firmer, Assorted,
70c; Large size, 80c per doz.Coal Pick.....40%
Drifting Pick.....40%
File, assorted, 30c; Large, 35c per doz.

Hammer.

Adze Eye.....per doz. 40 to \$1 00
Blacksmiths'.....45c@1 00
Machinists'.....50c@1 00

Hay and Manure Fork.....25%

Screw Driver.

Assorted.....60
Large.....90
Shovel and Spade.....25%

HANGERS.

Barn Door.

U. S. Rolled Bearing.....12 1/2%
Matchless.....12 1/2%
Warehouse Tandem, No. 44.....33 1/2%

Conductor P.

Iwan's Perfection.....50%

Eave Trough.

All sizes 5" or smaller,
.....per gross. \$3 80 Net
All sizes, larger than 5",
.....per gross. 5 00 "

Garage Door.

Right Angle.....50&10%
Sliding Folding.....50%
Receding.....50%

Parlor Door.

Acme.....per set, \$3 75
Ives' Improved.....3 40
Lane's Standard.....3 50
Lane's New Model.....3 10
Le Roy Noiseless.....40&10%
Richards.....25%
Advance.....40&10%

HASPS.

Hinge, Wrought.....Add 50% to list.
With Staples—See Staples.

HATCHETS.

Crescent.....50%
Cast Claw.....per doz. \$1 50@1 85
Cast Shingling.....1 50@1 85
Germantown.....7 1/2%

HAY KNIVES.

See Knives.

HAY RACK BRACKETS

Wenzelman's No. 1 per doz. sets, \$18 00
Wenzelman's No. 2 " " 19 20

HINGES.

Blind.

Clark's Gravity
No. 1.....per doz. sets, \$2 25
No. 3....." " 5 75

Gate.

Clark's.....1 2 3
Hgs & Lch, doz. \$5 50 7 00 9 75
Hinges only " 4 75 5 50 8 00
Latches only. 1 90 1 90

Screen Door.

Cast Iron.....gross \$10 00
Steel.....7 00

Spring.

Chicago.....Add 12 1/2% to list.
Columbia Dbl. Acting...40&10&5%
Gem.....25%
Ideal Detachable...per gro. \$11 00
Matchless.....40%
New Idea.....per gro. \$7 20
Oxford.....20%

Wrought Iron.

New Lists.
Light Strap Hinges.....15%
Heavy Strap Hinges.....25&5%
Light T Hinges.....15&5%
Heavy T Hinges.....20&5%
Extra Heavy T Hinges.....25%

Screw Hook and Strap.

6 to 12 in.....per 100 lbs. \$7 75
14 to 20 in....." " 7 50
22 to 36 in....." " 7 25

Screw Hook and Eye.

1/2 in.....per doz. pair \$2 60
1 in....." " 3 50
1 1/2 in....." " 5 00

HOES.

Garden.....Net

Grub.

Extra.....New prices
Hazel.....per doz. New prices
Ladies' and Boys'.....New prices
Mortar.....New prices
Planter's Eye.....New prices
Weed.....New prices

HOOKS.

Awning, No. 60.....per gro. 50%

Bell.

Brown's.....70&5%
Jones'.....65&5%

Bench.

See Stops, Bench.

Box. Inch..... 5 7 10 12 Per doz...\$2 50 2 75 3 25 3 85	Standard, Nos..... 1 2 Each.....\$0 60 1 00	LINING, STOVE.		NAIL PULLERS.	
Bush. Common Axe Handle, per doz.\$22 00	R-W..... Big Lift.....40% Tiger.....40%	Bricks.....per crate, 42c		See Pullers.	
Chain. Inch.. 1&1/4 1 1/2 1 3/4 2 Pr 100 \$7 60-8 10 9 75 11 50 12 60	KETTLES.	LOCKS.		NAIL SETS.	
Clothes Line. Japanned.....per doz.48c@1 40 Galvanized....." 75c@2 50	Brass.....15% Cauldron.....40&5% Copper.....per lb. 27 Maslin.....40&10% Sugar.....50%	Barn Door. No. 60 Stearns.....per doz. \$9 00 No. 80....." 17 50		See Sets.	
Coal and Hat. Common Wire....per gro. 1 25-1 65	KNIVES.	MACHINES.		NETTING, POULTRY.	
Conductor. Iwan's Tinned Sickle.....10%	Beet Topping. Clyde, 9-in. Scimitar Blade, dz. \$3 85 California.....3 40 Butcher.....Per doz. Handles, 6" blade.....\$3 25 7" blade.....3 75 Beechwood handles, 9" blade.. 4 50 10".....5 25 Cooper's Hoop.....15%	Boring.....Without With Augers Augers Angular...per doz. \$3 00 4 40 Upright...2 60 4 00		Galvanized before weaving,...40&10% Galvanized after weaving.....40%	
Corn. Common, riveted, painted red.....per doz. Nets Little Giant....."	Drawing. Standard.....(New List) 15% Adjustable.....15% Barton's Carpenters.....15%	Riveting. Stearns No. 1.....per doz. \$12 00		NIPPERS.	
Gate. See Goods, Bright Wire.	Hay. Iwan's Solid Socket.....doz.\$13 00 Heath's.....13 00 Iwan's, Sickle Edge.....15 50 Iwan's, Impv'd Serrated.....15 75	Tenoning. No. 50 Peace's Spoke...each \$10 75		End Cutting. Stubbs' Pattern, Inches. 5 6 Per dozen.....\$4 65 6 75	
Grass. Common Nos. 1 3 5 7 Per doz...\$4 50 3 50 3 75 3 25	Hedge. Challenge.....per doz. \$6 00 Diston's.....3 75	MAIL BOXES.		End and Diagonal Cutting. Swedish Side. Inches. 5 6 Per dozen.....\$4 50 5 75	
Hammock. With plate.....per doz. 1 10 With screw....." 1 00	Mining. Common, Single....." 60 Common, Double....." 90 Streeter, 4-blade.....1 30 Streeter, 6-blade.....2 00	See Boxes.		Hoof. Heller's.....40&10% V. & B.....55&5%	
Lambrequin, or Drapery, per gro. 30c	Putty. Common.....per doz. \$0 75@1 50 Lander's.....1 75@2 50	Carpenters'. Fibre Head, No. 2, per doz. \$16 50 " No. 3.....19 50 " No. 4.....28 50 Round Hickory.....\$3 00-5 00 Lignumvitae.....6 25-10 50 Square Hickory.....3 50-5 50 Lignumvitae.....8 00-12 00		NOZZLES.	
Picture.....50%@50%10%	Scraping. Beech Handle.....90@1 10 Lander's.....5 50@6 50	Tinners'. Hickory....." 2 25		Hose. Magic.....per doz. \$9 50 Diamond....." 5 75	
Potato and Manure.....Nets	Doors. Mineral.....per doz. \$2 10 Porcelain.....2 20 Jet.....2 20	Door. National Rigid.....50&10&5% Acme Steel Flexible.....50%		Diamond....." 5 75	
Screw. Brass.....70% (See Goods, Bright Wire.)	Ladders. Common Long. Per ft.17c@23c	Stove. No. 2.....per gro. Nets No. 1....." " No. 1 Asbestos Toasters, or wire-covered Stove Mats, with handle.....per doz. 1 10 No. 2 Asbestos Toasters, with ring.....per doz. 60		NUTS, HOT PRESSED.	
Seat Spring.....per lb. 51c	Extension. Per ft.22 to 28	MATTS.		Square Tapped. \$1.05 off per 100 lbs. Hexagon Tapped. 85c off per 100 lbs.	
HOSE, GARDEN.	Step. Common, per ft.23c Common, with Shelf, add 10c. IXL.....34c Challenge, 6 to 9 ft.55c 10 to 16 ft.60c	MATTOCKS.		OILERS	
Coupled, per ft. Velvet, 3 ply-1" guar. press. 14c Eclipse....." 17 1/2c Diamond....." 21c	Lanterns. Bull's Eye Police. 3-in. Flash Light...per doz. \$13 00	Plumbs.....25%		Chase Pattern. Brass and Copper.....25-10% Zinc.....35% Engineers'. Tin.....per doz. \$7 00@ 9 00 Machine. Common.....per doz. \$0 85	
COTTON COV. RUBBER HOSE.	Leaders, CATTLE.	MAULS.		Box. See Box Chisels	
High Grade Apache 1" guar. press. 400 lbs.....40c	LEATHER, LACE.	Iron, lbs. 10 13 16 18 Per doz.Prices on Application Wood Face, lbs. 10 12 14 Per doz.Prices on Application Wood Choppers'. Lake Super'r & Oregon Pat. 40&5%		Can. Delmonico.....per doz. \$1 30 Never Slip....." 65	
HUSKERS.	LEATHERS, PUMP.	MEASURES.		Crate. V. & B....." 7 25-11 00	
Nos..... B E Per doz.....New Nets No. 59.....per doz. New Nets	Valve and Plunger.....10%	Galvanized, doz.Nets Japanned, doz.Nets		Machine. Common.....per doz. \$0 85	
IRON, PIG.	LIFTERS.	MILLS, COFFEE.		OPENERS.	
See Metals-First column.	Stove Cover. Coppered.....per gro. \$3 25@5 50 Alaska.....8 00 Alaska.....10 00	Enterprise.....161% Parker.....50&5% Arcade.....40-10%		See Box Chisels	
IRONS.	Transom. Payson's.....55%	Arcade.....40-10%		Can. Delmonico.....per doz. \$1 30 Never Slip....." 65	
Curling. C.....per doz. \$4 40 B.....50 A.....58 Princess.....1 25 Thelma.....1 25 Pinkie.....1 00	Lines. Chalk. Twisted in 20-ft. hanks. Nos. 4 6 7 8 9 Gro.Prices on Application Twisted in 50-ft. balls. Nos.1 2 3 4 Per doz.Prices on Application Braided in 20-ft. hanks. Nos.0 1 2 3 Per doz.Prices on Application Mason's....."	MITRE BOXES.		Crate. V. & B....." 7 25-11 00	
Pinking....." 1 00	Clothes. 60 ft. Jute.....per doz. \$0 95 60-ft. Sisal.....40 50-ft. Cotton.....15 50-ft. Braided Cotton.....25	See Boxes.		Machine. Common.....per doz. \$0 85	
Plane. Wood Bench.....Add 10% to list	Transom. Payson's.....55%	MOPS.		Box. See Box Chisels	
See Metals-First column.	Transom. Payson's.....55%	Cotton. Star (Cut Ends). Pounds 12' 15' 18' 24'-3 oz. Per doz. \$4 50 5 65 6 75 9 00		Can. Delmonico.....per doz. \$1 30 Never Slip....." 65	
LANE.	Transom. Payson's.....55%	MOWERS, LAWN.		Crate. V. & B....." 7 25-11 00	
Curling. C.....per doz. \$4 40 B.....50 A.....58 Princess.....1 25 Thelma.....1 25 Pinkie.....1 00	Transom. Payson's.....55%	Gladiator-B. B. Inches.....16 18 20 Each.....\$6 50 7 25 8 00 King Universal-B. B. Each.....\$5 25 5 75 6 00 Inches.....14 16 18 Big Giant.....\$3 50 3 90 4 25		Machine. Common.....per doz. \$0 85	
Pinking....." 1 00	Transom. Payson's.....55%	Stearns'. No. 1-12 in.each \$6 75 14 in.7 00 16 in.7 25 18 in.7 50 No. 2-10 in.7 75 12 in.8 25 14 in.8 75 16 in.9 25 18 in.10 00 20 in.10 75 No. 3-10 in.8 00 12 in.8 50 14 in.9 00 16 in.9 50 18 in.10 25 20 in.11 20		Box. See Box Chisels	
Plane. Wood Bench.....Add 10% to list	Transom. Payson's.....55%	NAILS.		Can. Delmonico.....per doz. \$1 30 Never Slip....." 65	
See Metals-First column.	Transom. Payson's.....55%	Cut Steel.....Prices on Application Cut Iron....."		Crate. V. & B....." 7 25-11 00	
LANE.	Transom. Payson's.....55%	Wire. Small Lots.....Prices on Application Cement Coated. Small Lots.....Prices on Application		Machine. Common.....per doz. \$0 85	
Curling. C.....per doz. \$4 40 B.....50 A.....58 Princess.....1 25 Thelma.....1 25 Pinkie.....1 00	Transom. Payson's.....55%	Horseshoe. Ausable.....55&5% Capewell.....15% Perfect.....55&5% Putnam.....20&5% Star.....30&5%		Box. See Box Chisels	
Pinking....." 1 00	Transom. Payson's.....55%	Picture. Brass Heads.....25% Brads.....50&5% Furniture.....List plus 15%		Can. Delmonico.....per doz. \$1 30 Never Slip....." 65	
Plane. Wood Bench.....Add 10% to list	Transom. Payson's.....55%	Fencing. Black Bull.....All Nets Farmers' Choice.....All Nets Russell's.....All Nets		Crate. V. & B....." 7 25-11 00	
See Metals-First column.	Transom. Payson's.....55%	Flat and Round Nose. Bernard's.....New Prices Lodi.....New Prices Paragon.....New Prices		Machine. Common.....per doz. \$0 85	
LANE.	Transom. Payson's.....55%	Gas.-Inches 7 8 10 12 14 Per doz. 5 00 5 50 7 00 8 00 10 00		Box. See Box Chisels	
Curling. C.....per doz. \$4 40 B.....50 A.....58 Princess.....1 25 Thelma.....1 25 Pinkie.....1 00	Transom. Payson's.....55%	Gas.-Inches 7 8 10 12 14 Per doz. 5 00 5 50 7 00 8 00 10 00		Can. Delmonico.....per doz. \$1 30 Never Slip....." 65	
Pinking....." 1 00	Transom. Payson's.....55%	Gas.-Inches 7 8 10 12 14 Per doz. 5 00 5 50 7 00 8 00 10 00		Crate. V. & B....." 7 25-11 00	
Plane. Wood Bench.....Add 10% to list	Transom. Payson's.....55%	Gas.-Inches 7 8 10 12 14 Per doz. 5 00 5 50 7 00 8 00 10 00		Machine. Common.....per doz. \$0 85	
See Metals-First column.	Transom. Payson's.....55%	Gas.-Inches 7 8 10 12 14 Per doz. 5 00 5 50 7 00 8 00 10 00		Box. See Box Chisels	

PARERS.	TINNERS.	PUNCHES.	SAWS.
<i>Apple.</i>	Hollow.....Net list	Conductors.	<i>Bend.</i>
Goodell's.....per doz. \$10 80	Solid.....each, 10c	No. 22.....per doz. \$3 00	E. C. Atkins & Co. Prices on applic'n
Turntable....." 11 40	PLUMBS AND LEVELS.	Machine.....per lb. 25	<i>Buck.</i>
White Mountain....." 8 40	Common.....Nets	<i>Saddlers.</i>	Disston's.....New nets
Reading, No. 78....." 11 40	Cook's.....40%	Common.....per doz. 1 50 to 5 00	Jackson's.....New nets
<i>Potato.</i>	Davis' Iron.....25%	<i>Revolving Spring.</i>	<i>Butchers.</i>
Goodsell's Saratoga, 10 1/2 in., dz. 6 50	Davis' Inclinator.....15%	Stearns, No. 10.....per doz. \$4 80	E. C. Atkins & Co. Prices on applic'n
Goodsell's Saratoga, 5 in., dz. 5 50	POINTERS, SPOKE.	" No. 40....." 9 50	Disston's.....New nets
PICKS.	Stearns' No. 1.....per doz. \$7 25	" No. 60....." 12 80	<i>Circular.</i>
Adze Eye Ore.....22 1/2%	" No. 2....." 9 25	PUTTY.	E. C. Atkins & Co. Prices on applic'n
Drifting and Poll Picks.....22 1/2%	POKERS, STOVE.	Strictly pure.....per 100 lbs. \$4 25	Disston's.....New nets
Plumbs, Railroad.....22 1/2%	Wrt Steel, str't or bent per doz. \$0 75	RAIL.	Hiles'.....New nets
Surface.....22 1/2%	Nickel Plated, coil han'l's " 1 10	Matchless, 1-in.....5c	Simonds'.....New nets
PINCERS.	POLISH.	Matchless, 1 1/2-in.....7c	<i>Compass.</i>
Carpenters', cast steel.	Burnshine.	Storm King.....5c	E. C. Atkins & Co. Prices on applic'n
Inches... 6 8 10 12	1-pint.....doz. \$1 10	<i>Sliding Door.</i>	Common.....New nets
Per doz...\$3 75 4 75 6 25 7 00	1-pint....." 1 50	Bronzed wrought iron...per ft. 8 1/2c	Disston's.....New nets
Blacksmiths'.....45%	1-quart....." 2 60	RAKES.	<i>Cross-Cut.</i>
Heller's.....40%	1-gal....." 9 00	Steel, Bow, 12-inch Teeth.....\$8 50	E. C. Atkins & Co. Prices on applic'n
PINS.	1-gal....." 15 00	Steel, Bow, 14-inch " 9 25	Disston's.....New nets
<i>Clothes.</i>	<i>Metal.</i>	Malleable Iron, 12-in. " 4 75	Simonds'.....New nets
Common.....per box of 5 gro. \$0 95	Wizard, 6 oz.....per gross \$17 40	Malleable Iron, 14-in. " 5 00	<i>Dehorning.</i>
<i>Pickel</i>	" 1 pt....." 19 20	<i>Hay.</i>	Disston's.....New nets
Fluted, 15-in.....per doz. \$1 10	" 1 qt....." 36 00	Wood, 10 Teeth.....\$4 00	Hack.
Fluted, 21-in....." 1 60	" 1 qt....." doz. 5 40	<i>Lawn.</i>	Disston's.....New nets
Spiral....." 1 90	" 1 gal....." 9 60	20 Teeth.....per doz. \$5 50	Simonds' Box Lots.....New nets
PIPE.	" 1 gal....." 15 60	RASPS—See Files.	Star.....New nets
<i>Conductor.</i>	<i>Slove.</i>	RAZORS—SAFETY.	<i>Hand and Rip.</i>
Standard Gauge Conductor Pipe,	Black Eagle Paste, 1-lb. cans,	Gillette.....per doz. \$45 00	E. C. Atkins & Co. Prices on applic'n
plain or corrugated.	per gross.....\$30 00	Auto Strip....." 45 00	Disston's No. 7.....New nets
Not Nested.....45&5% off	Black Eagle Paste, 5-lb. cans,	Gem....." 8 40	Disston's Nos. 8, D8, 12, 76, 112,
Nested solid.....50% off	per case.....4 90	Gem (3 doz. lots)....." 8 00	D100, and 120.....New nets
L. C. L. to Dealers:—	Black Jack Paste, #10, 8 oz.,	Ever Ready....." 8 40	Keystone.....New nets
Terms 60 days; 2% Cash 10 days.	per gross.....11 40	Ever Ready (3 doz. lots)....." 8 00	<i>Keyhole.</i>
Factory shipments generally delivered.	Black Eagle Liquid, 6 oz.,	RAZOR STROPS.	Disston's.....New nets
OUTFITS, COBBLING	per gross.....13 20	Star (Honing).....50%	<i>Miter Box.</i>
Combination.....per doz. \$16 00	FIRE POTS.	REGISTERS.	E. C. Atkins & Co. Prices on applic'n
Economy....." 8 50	Clayton & Lambert's, each \$4 00@6 00	Japanned, Bronzed & Plated.....40%	Narrow Band.
Family....." 14 50	Gate City.....each, 6 25	Solid Brass or Bronze Metal..Net	Simonds'.....New nets
PAIS.	Gem.....each, \$6 75@8 50	list plus.....Prices on application	<i>Panel.</i>
<i>Cream.</i>	POWDER.	Baseboard.....40%	E. C. Atkins & Co. Prices on applic'n
14-qt., without gauge, per doz. \$9 50	See Ammunition.	REGISTER FACES.	Disston's No. 7.....New nets
18-qt., " " " 11 00	PRESSES, FRUIT AND JELLY.	Japanned, Bronzed and Plated.	<i>Pruning.</i>
20-qt., " " " 11 75	Enterprise Manufacturing Co....25%	4x6 to 14x14.....40%	Disston's.....New nets
<i>Sap.</i>	PRIMERS.	14x14 to 38x42.....60%	Rift.
10-qt., IC Tin.....per doz. \$4 00	See Ammunition.	REVOLVERS.	Simonds'.....New nets
12 " " " 5 50	PRUNERS.	Iver Johnson Safety Automatic	<i>Wood.</i>
<i>Stock.</i>	Disston's Pole.....per doz. \$18 00	Hammer.....New Nets	E. C. Atkins & Co. Prices on applic'n
Galv'd. qts. 14 16 18 20	Water's Improved.....60%	Hammerless....."	Common.....New nets
Per doz...\$9 75 10 75 12 75 14 50	PULLERS.	I. J. Model 1900....."	Clover leaf.....New nets
<i>Water.</i>	<i>Cork.</i>	RINGS AND RINGERS.	SAW BUCKS—See Bucks.
Galvanized, qts. 10 12 14	Daisy.....each, \$3 10	<i>Bull.</i>	SAW SETS—See Sets.
Per doz...\$5 75 6 50 7 25	Phoenix....." 1 40	Copper.....2 1/2-in. 3-in.	SAW FRAMES.
<i>Wood.</i>	Quick and Easy....." 2 70	per doz.....\$2 75 \$3 25	Common, plain.....per doz. \$1 50
Cable, 2-Hoop.....per doz. Nets	<i>Nail.</i>	Rea's Improved Self-	Common painted....." 2 10
Cable, 3-Hoop....." Nets	Giant.....per doz. 14 50	Piercing copper, doz. 3 40	SCALES.
Cedar, 3-Hoop, brass.. " Nets	Never-Slip....." 17 00	Steel, per doz.....1 50 1 80	<i>Counter.</i>
PANS.	PULLEYS.	<i>Hog.</i>	Pelouze.....40&10%
<i>Dripping.....Net</i>	Awning—Jap'd.....10%	Blair's Rings.....per doz. \$ 75	SCISSORS.
<i>Fry.</i>	Clothes Line.....10%	Blair's Ringers....." 1 00	Star.....60%
Common.....Nets	<i>Hay Fork.</i>	Brown's Rings....." 72	SCOOPS.
Acme....."	Iron Wheel, 5-in.....per doz. 2 50	Brown's Ringers....." 1 00	<i>Grain.</i>
<i>Roasting.</i>	Wood Wheel, 6-in....." 2 65	Hill's Rings....." 72	1 bu. "Hercules".....per doz. 3 70
Paxton.....1 2 3 4	Wood Wheel, 6-in., pass knot,	Hill's Ring, boxes....." 60	1 bu. "Hercules"....." 5 00
Per doz.....Netsper doz. 3 00	Major Rings....." 1 50	SCRAPERS.
Neverburn....."	<i>Sash.</i>	Perfect Ringers....." 1 65	<i>Box.</i>
Savory No. 200.....per doz. \$8 40	Common.....Net	Wolverine Rings....." 1 10	Triangular, No. 6....per doz. \$6 25
PAPER.	Common-Sense, 2-in.....Net	RIVETS.	<i>Cabinet.</i>
<i>Building.</i>	Empire Pattern, 2-in.....Net	Copper Belt.....Add 15% to list	Stearns' No. 8.....per doz. \$10 00
Plain.....per 100 lbs.	Ideal.....Net	Coppered Iron.....30%	No. 9, Ball and
Tarred....." Prices on appl.	Steel.....Net	Tinners'.....30%	Socket.. per doz. 11 25
Tarred Felt....." "	PUMPS.	Hame.....per lb. \$0 17	<i>Floor.</i>
Red Rosin, 20-lb.....per roll 72c	<i>Pitcher Spout.</i>	Slotted Clinch.....per doz. 60c@1 10	No. 10, Stearns'.....each \$13 50
Red Rosin, 25-lb....." 90c	Nos. 1 2 3 4	<i>Tubular.</i>	<i>Road.</i>
Red Rosin, 30-lb....." \$1 08	Each.....Nets	Nos. 1 and 2 assorted sizes, 50	Cubic ft. 7 5 3
<i>Sand and Emery.</i>	<i>Spray.</i>	in box.....doz. 75c	With runners, ea. \$7 00 6 50 6 20
No. 1, per ream, best grade....\$5 40	Midget Junior.....per doz. 3 75	Nos. 1 and 2 assorted sizes, 10	SCREEN DOOR HINGES.
No. 1, per ream, cheaper grade. 4 85	New Misty....." 6 00	in box.....doz. 1 40	Cast iron.....gross, \$13 00
<i>Wrapping.</i>	Crescent....." 6 50	RIVET SETS.	Steel....." 9 50
Express.....100 lbs. Nets		See Sets.	SCREWS.
		ROPE.	<i>Bench.</i>
		Cotton.	Iron, ins. 1 1 1/2 1 1/2
		1, 5-16 in. Com. on reels, per lb. Market	\$9 75 1 50 13 75 21 50
		1, 5-16 in. Com. in coils. " Price	Wood, white maple...per doz. 6 00
		<i>Sisal.</i>	Hand—Wood.....35%
		1st Quality.....23 1/2c	Hand Rail.....22 1/2%
		No. 2.....20 1/2c	Jack.....30-5%
		<i>Pure Manila.</i>	Lag or Coach—all sizes, gimlet
		1st quality, base.....per lb. 27 1/2c	pointed.....50-10%
		Hardware Grade.....26 1/2c	<i>Saw—Centennial.</i>
		RULES.	Nos.....1 2 3 4
		Hickory Board.....20%	Per doz.....47c 55c 75c 90c
		Log.....20%	<i>Wood.</i>
			F. H. Bright.....70-10-10%
			R. H. Blued.....65-10-10%
			F. H. Jap'd.....62 1/2-10%
			F. H. Brass.....42 1/2-10-5%
			R. H. Brass.....40-10-5%
			R. H. Nickel Plated.....57 1/2-10%
			SCYTHES.
			Clipper, grass.....per doz. \$13 50
			Honest Dutchman...." 13 70

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Standard Furnace & Supply Co.,
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Stearns Register Co., Detroit, Mich.
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Chicago, Ill.

Solder.
Allen Co., Inc., L. B.,
Chicago, Ill.

Soldering Iron—Self Heating.
Allen Co., Inc., L. B.,
Chicago, Ill.

Specialties—Hardware.
Corbin Screw Corporation,
New Britain, Conn.
Delta File Works, Philadelphia, Pa.
Diener Mfg. Co., G. W.,
Chicago, Ill.
Lufkin Rule Co.,
Saginaw, Mich.
North Bros. Mfg. Co.,
Philadelphia, Pa.

Specialties—Tin and Sheet Metal.
Curfman Mfg. Co., F. L.,
Maryville, Mo.

Speedometers—Bicycle.
Corbin Screw Corporation,
New Britain, Conn.

Statuary.
Friedley-Voshardt Co.,
Chicago, Ill.
Gerock Bros. Mfg. Co.,
St. Louis, Mo.

Sticks—Soldering.
Allen Co., Inc., L. B.,
Chicago, Ill.

Stoves—Oil and Gasoline.
Ringin Stove Co.,
St. Louis, Mo.

Stoves and Ranges.
Nye & Son Co., A. T. The,
Columbus, Ohio.
Ringin Stove Co.,
St. Louis, Mo.

Stoves—Laundry.
Nye & Son Co., A. T. The,
Columbus, Ohio.

Stove Pipe Reducer.
Sullivan-Geiger Co.,
Indianapolis, Ind.

Tacks, Staples, Spikes.
American Steel & Wire Co.,
Chicago-New York.

Tapes.
Lufkin Rule Co.,
Saginaw, Mich.

Tiles and Shingles—Metal.
Milwaukee Corrugating Co.,
Milwaukee, Wis.

Tin—Perforated.
Harrington & King Perforating
Co.,
Chicago, Ill.

Tinplate.
American Sheet & Tin Plate Co.,
Pittsburgh, Pa.

Tools—Auto Repair.
Curfman Mfg. Co., F. L.,
Maryville, Mo.

Tools—Carpenters'.
Lufkin Rule Co.,
Saginaw, Mich.
North Bros. Mfg. Co.,
Philadelphia, Pa.

Tools—Sheet Metal.
Bertsch & Co.,
Cambridge City, Ind.
Dreis & Krump Mfg. Co.,
Chicago, Ill.
Lennox Throatless Shear Co.,
Marshalltown, Iowa.
Niagara Machine & Tool Works,
Buffalo, N. Y.
Tanner & Co.,
Indianapolis, Ind.

Tools—Tinmiths'.
Bertsch & Co.,
Cambridge City, Ind.
Double Blast Mfg. Co.,
North Chicago, Ill.
Dreis & Krump Mfg. Co.,
Chicago, Ill.
Lennox Throatless Shear Co.,
Marshalltown, Iowa.
Niagara Machine & Tool Works,
Buffalo, N. Y.
Tanner & Co.,
Indianapolis, Ind.

Torches—Gasolene.
Allen & Co., Inc., L. B.,
Chicago, Ill.
Clayton & Lambert Mfg. Co.,
Detroit, Mich.
Diener Mfg. Co., G. W.,
Chicago, Ill.
Double Blast Mfg. Co.,
North Chicago, Ill.

Transit Companies.
Cleveland & Buffalo Transit Co.,
Cleveland, Ohio.

Trough—Eaves.
Abbott Mfg. Co.,
Cleveland, Ohio.
Berger Bros. Co.,
Philadelphia, Pa.
Friedley-Voshardt Co.,
Chicago, Ill.
Milwaukee Corrugating Co.,
Milwaukee, Wis.
Whitaker-Glessner Co.,
Wheeling, W. Va.

Ventilators.
Berger Bros. Co.,
Philadelphia, Pa.
Friedley-Voshardt Co.,
Chicago, Ill.
Standard Ventilator Co.,
Lewisburg, Pa.

Ventilators—Ceiling.
Hart & Cooley Co.,
New Britain, Conn.

Vises.
North Bros. Mfg. Co.,
Philadelphia, Pa.

Wood Faces.
Dover Wood Face & Lbr. Co.,
Dover, Ohio.

¶ **ADVERTISING**
is the power of an
idea multiplied.

¶ Other powers
lose by expansion.
Steam is power
only when con-
fined. Electricity
radiated and dif-
fused becomes
nothing. Sound
dies with distance.
Great suns pale
into invisible
stars, and the
power of light
itself is lost in in-
finite space. But
the strange power
of advertising in-
creases by expan-
sion. Diffusion is
its life. It grows
by what it im-
parts.

¶ The advertised
idea, to become a
power, must be genu-
ine, vital, and related
to the function of a
meritorious business;
and the means of its
furtherance must be
well chosen.

¶ To choose well the
means for the further-
ance of *your* adver-
tised idea, in order
that it may become a
power, in order that
you may show its genu-
ineness as a vital
factor of your busi-
ness, is not hard.

¶ A close perusal from
cover to cover of
this week's issue of
**AMERICAN ARTISAN
AND
HARDWARE RECORD**
620 So. Michigan Ave.
Chicago, Illinois
will disclose abundant
evidence of this fact.

WANTS AND SALES

For paid yearly subscribers, **AMERICAN ARTISAN AND HARDWARE RECORD** will insert under this head advertisements of not more than fifty words **WITHOUT CHARGE**. Employers wishing to secure employees, parties desiring to purchase or sell business, secure partners or to exchange, etc., will find that these pages offer excellent opportunities to satisfy their wants. Clerks and tinsmiths looking for situations will find it to their advantage to use these columns. Those who respond to these announcements please mention that they "**READ THE ADVERTISEMENT IN AMERICAN ARTISAN AND HARDWARE RECORD.**"

BUSINESS CHANCES

Wanted—Safe, cash register and store fixtures. Elskamp and Wiedmann, Potosi, Wisconsin. 25-3t

For Sale—Half interest to sheet metal worker or plumber or business man understanding these lines. Good live town in eastern Iowa. Plenty of work on hand. Address C-14, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 22-3t

For Sale—One of the best equipped tin and plumbing shops west of Waco, Texas. In town of 2,000, with large trade territory. Fifteen deep test wells going down in from three to fifteen miles of town with good showing in several. Good reasons for selling. Will F. Hooker, Hico, Texas. 23-3t

For Sale—A good clean stock of hardware and stoves. Doing a fine business. County seat town and good farming country. A good proposition if sold by July 1. Central Iowa. Good reason for selling. Please address C-19, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 24-3t

Wanted by September 1st — Reliable tinner desires to rent small shop and tools or shop to run on a percentage basis. Prefer live Southwestern town where there is work. If interested please write, giving full particulars, to C-20, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 25-3t

For Sale—Tin and furnace business. A paying proposition in a live town. Plenty of work on hand. One wishing to go into business can step in and go right ahead. Must sell on account of sickness. Must dispose of complete set of tools. It is located 139 miles from Chicago. Address C-9, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 22-3t

For Sale—A good clean stock of hardware, stoves and farm implements. Located in the best of farming communities in central Illinois. This is an old established business and a splendid opportunity to get a first-class hardware and implement business. Reason for selling, am advanced in years and want to retire. Please address C-17, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 22-3t

Well Established Stove Line Open for Michigan on Commission Basis—We are looking for a wide-awake, successful manufacturer's agent operating on a strictly commission basis and having no other obligations or ties that would prevent him from devoting to this line the energy and efforts it deserves.

This line now enjoys an extensive sale throughout the State. It's all clean-cut business, obtained strictly on merits. The business already established will pay an attractive salary. And the kind of man we are looking for can increase the present business materially.

The volume and possibilities of this business is such that first-class reference as to ability must be required. Also full information as to how long territory has been covered, how often and how closely it is worked and any other qualification possessed. Address Post Office Box No. 267, Quincy, Illinois. 23-4t

HELP WANTED

Wanted—Tinner and men to install warm air furnaces. Mohr-Jones Hardware Company, Racine, Wisconsin. 25-3t

Wanted—All around tinner and furnace man. Livingston Sheet Metal Works, Livingston, Montana. 23-3t

Wanted at Once—Tinner for inside and outside work. Good pay for a good man. Chas. F. Lumm, Garrett, Indiana. 24-3t

Wanted — Combination tinner and plumber. Open shop. Will pay top wages. Stanek Hardware Company, Libertyville, Illinois. 24-3t

Wanted—Tinner. Steady work for the right man. Will pay from 50c up. Benton Sheet Metal and Furnace Works, Benton Harbor, Michigan. 25-3t

Wanted at Once—First-class bench man. Steady work. 75c per hour. Union shop. Young man preferred. Brizee Metal Works, Twin Falls, Idaho. 23-3t

Wanted—First-class mechanic to do tinning, plumbing and heating. Steady work to a good man in a good town. Siders & Hughes, Bement, Illinois. 24-3t

Wanted — An experienced hardware clerk. Give age, experience and references and state wages wanted in first letter. H. H. Toman, Cherokee, Iowa. 24-3t

Wanted—Tinner. Plenty of work and good job for men who can handle both inside and outside work. Scale 75c per hour. Herman's Tin Shop, Phone Highland Park, Illinois, 555. 23-3t

Wanted at Once—Good tinner; one who can do gutter work, warm air heating and roofing. Married man. State wages wanted for year-around job. Work 9 hours. R. H. Vandevede & Co., Dyersburg, Tenn. 23-3t

Wanted at Once—First-class all around plumber and tinner who can do hot air, steam and hot water heating. Wages 75c per hour. Steady work the year around. Apply to Carl Heinzelman, Midland, Michigan. 24-3t

Wanted—Sheet metal workers and roofers, men who can do inside and outside work. Steady. 75c per hour, union shop, 8-hour day. If interested and can come at once, wire us at our expense. Griffith and Dooley, Box 194, Charleston, West Virginia. 22-4t

Wanted at Once—Two good men, one a plumber and furnace fitter, and one a combination tinner and electrician. None but first-class men need apply. Good salary and steady positions for both men. Chas. L. Knowles, Kingsley, Iowa. 25-3t

Wanted—Tinner on dairy work. Good solderers. Married men preferred. No objection to age if you can handle job. Best of wages. 10 hours a day and five on Saturday during summer and nine in winter. Clinton Mfg. Company, Clinton, Wisconsin. 24-3t

Wanted—First-class sheet metal workers in Western city for shop work, doing ventilating and cornice work. Would like men who can lay out work if necessary, and willing to go out to put it up. Wages 75c per hour. Charles Haas, 1415 Davenport Street, Omaha, Nebraska. 22-3t

Wanted—All around tinner, plumber and heating mechanic. Steady employment the year around. Wages \$25.00 per week and better, according to ability. Address C-13, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 22-3t

Wanted—First-class combination tinner and plumber; one who can install furnaces, repair pumps and take care of all work such as comes up in a country town of 1,000 population. Steady job year around for a good man. State wages wanted. W. Wilker, Wyoming, Iowa. 24-3t

Wanted—A good all around tinsmith by the first of June. Good wages and steady position. The best town in the state to live in. Located in southeastern South Dakota, town of 5,000. Address C-11, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 22-3t

Wanted at Once—A reliable and sober tinner for furnace work, gutters, galvanized roofing and general jobbing shop. Work the year around. City of 6,000. Board \$6.00 per week. Address C-10, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 23-3t

HELP WANTED

Wanted — First-class tinner. Steady work; good wages. Porter-Hurlbert Hardware Company, Frankfort, Indiana. 25-3t

Wanted—A good all around tinner and furnace man. Steady job for the right man. Leffingwell Mercantile Company, Brighton, Colorado. 25-3t

Wanted—Capable retail hardware salesman and stockkeeper. Must have two or more years' experience. No implements. Address J. E. Ferguson Hardware Company, Kingman, Kansas. 23-3t

Wanted—A first-class tinner and plumber at once. Wages \$30.00 per week. Steady work the year around to good man. Have best equipped shop in Central Texas. Write to F. Kutzschbach, Taylor, Texas. 25-3t

Wanted at Once—Man in hardware store to do tinning repair work, inside and out, repair well pumps; drive truck, etc. Will pay \$20.00 a week this year and more as you become acquainted with the trade. Good town. Geo. Collier and Son, Farmer City, Illinois. 25-3t

Wanted—Have opening for a good all around jobber. Will pay \$35.00 or better to right man. Steady work the year around. Am trying to get a man capable of being foreman of shop. Good future prospect. Write or apply to H. Schmidt and Company, 451 South Clark Street, Chicago, Illinois. 25-3t

Wanted—An A-1 furnace and sheet metal worker who can cut patterns and take full charge of the practical end in a growing manufacturing business; one who is able or willing to take a financial interest in the business to the extent of \$500, if conditions are suitable to him. Address C-12, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 23-3t

SITUATION WANTED

Situation Wanted—By an all around tinner in open shop. County seat town. Furnace work preferred. No plumbing. Fred E. Wittbecker, 95 Van Buren Street, Freeport, Illinois. 25-3t

Situation Wanted—In country town hardware store by a first-class mechanic, tinner, furnace workman and hardware salesman. Have had 20 years' experience. H. J. Ester, 725 West Main Street, Washington, Missouri. 23-3t

Situation Wanted—As manager or head clerk with up-to-date hardware firm by a first-class hardware man with 16 years' experience, 10 years as manager of my own business with proven success. Married, age 39. Would like a place with future opportunity. Address E. J. Drilling, Craig, Iowa. 23-3t

Situation Wanted—By an all around heating and ventilating man who has been doing road work for the last seven years and would like to get in touch with some reliable firm that is in need of a man with my experience. Address C-18, care of **AMERICAN ARTISAN AND HARDWARE RECORD**, 620 South Michigan Boulevard, Chicago, Illinois. 24-3t

TINNERS' TOOLS

Wanted—One set of forming rolls, 36 to 40x3. Must be in good shape. W. P. Myers, Linden, Michigan. 25-3t

Wanted at Once — Eight-foot brake. Must be in good condition. S. R. Milbrandt, 918 S. First Street, Aberdeen, South Dakota. 24-3t

Wanted—I wish to purchase a B. T. U. Slide Rule for estimating steam and hot water radiation. Address J. Oscar Smith, Moberly, Missouri. 25-3t

For Sale—One late pattern Mueller Water-Main Tapping Machine, complete. Cost \$110.00, but will sell for \$80.00 cash. Address J. Oscar Smith, Moberly, Missouri. 25-3t

For Sale—A nearly complete set of tinner's tools, stakes and machines. A number of them are almost new, including 27 inch shear, rolls and 42 inch folder. For list and prices address B. F. Stow, Wyanet, Illinois. 23-3t